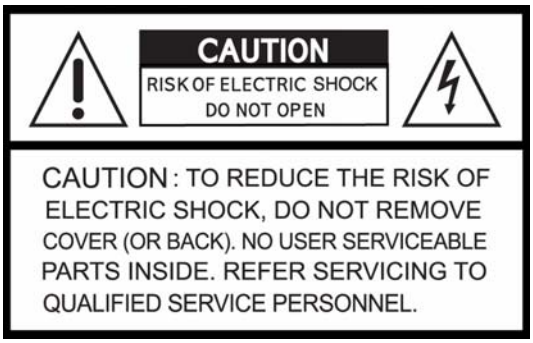


This symbol is intended to alert the user to the presence of unprotected “Dangerous voltage" within the product's enclosure that may be strong enough to cause a risk of electric shock.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

NOTE: This equipment has been tested and found to comply with the limits for a class digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Disposal of Old Electrical & Electronic Equipment
(Applicable in the European Union and other European countries with separate collection systems)

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office , your household waste disposal service or the shop where you purchased the product.

PRECAUTION

All the safety and operating instructions must be read before the unit is operated.

- **Make sure to switch the power off before you install the DVR.**
- **There is the danger of an electric shock if the DVR is opened by an unqualified service engineer or installer.**
- **Avoid using the DVR outside of the reference temperature and humidity indicated in the specification.**
- **Avoid exposing the DVR to violent movement or vibration.**
- **Do not use or store the DVR in direct sunlight or near to any source of heat.**
- **Do not place any object into the holes used for air circulation.**
- **Always use the DVR in a well ventilated location to prevent overheating.**
- **Risk of explosion if battery is replaced by an incorrect type.**
- **Dispose of used batteries according to the instructions.**
- **When the cooling fan is stopped, the below warning message will be displayed at the monitor.**

  " COOLING FAN IS STOPPED, TURN THE POWER OFF AND CHECK COOLING FAN"

  In this case, do the power off right away and check the cooling fan working.

- **The HDD is recommended to use enhanced IDE Hard Disc Drive type made by Western Digital, Seagate, Hitachi and IBM, Samsung Electronics.**

EXTERNAL HDD BAY (If specified as an accessory)

- **Always attach the joining cable lead between the DVR and the HDD Bay for correct system management. (Refer to the section describing the installation procedure for the EXTERNAL HDD BAY)**
- **While the EXTERNAL HDD BAY is in operation never disconnect the power or connecting cable. Before opening the top cover, you must turn off the power by the switch on the front panel of the DVR. And then disconnect the power cord and other cables. Failure to follow this procedure will result in lost data or malfunction of the system.**
- **When replacing any HDD always make certain that the replacement part is fitted in the same place and with the same connections as the original.**

TABLE OF CONTENTS

1. FEATURE LIST ---------- 6

2. PACKING DETAIL ---------- 8

3. LOCATION AND CONTROL ---------- 9

3.1 FRONT PANEL CONTROLS ---------- 9
3.2 REAR PANEL CONNECTORS ---------- 10

4. INSTALLATION ---------- 11

4.1 TOTAL CONNECTION LAY-OUT ---------- 11
4.2 INDIVIDUAL CONNECTION ---------- 12
4.2.1 CAMERA ---------- 12
4.2.2 AUDIO ---------- 12
4.2.3 MONITOR ---------- 13
4.2.4 EXTERNAL HDD BAY ---------- 14
4.2.5 USB 2.0 Ports ---------- 15

5. OPERATION ---------- 16

5.1 FACTORY DEFAULT ---------- 16
5.2 BUTTON CONTROLS ---------- 20
5.2.1 POWER ON / OFF ---------- 20
5.2.2 SCREEN DISPLAY ---------- 20
5.2.3 RECORD ---------- 22
5.2.4 SEARCH & PLAYBACK ---------- 23
5.2.5 PLAY BUTTON INFORMATION ---------- 28
5.2.6 DIGITAL ZOOM---------- 29
5.2.7 SCREEN SELECT (LV/PB) ---------- 30
5.2.8 SPOT MONITOR ---------- 30
5.2.9 COPY ---------- 31
5.2.10 DVR STATUS ---------- 35
5.2.11 PTZ CONTROL ---------- 35
5.2.12 FUNCTION BUTTON ---------- 37
5.2.13 AUDIO SELECT ---------- 37
5.2.14 PIP CONTROL ---------- 37

5.3 REMOTE CONTROLLER ---------- 38

5.4 MOUSE CONTROL ---------- 38

6. MENU SETUP ---------- 39

6.1 QUICK SETUP ---------- 39

6.2 SCREEN ---------- 41
6.2.1 AUTO SEQUENCE ---------- 41
6.2.2 DISPLAY ---------- 43
6.2.3 TITLE ---------- 45
6.2.4 MULTI SCREEN ---------- 46
6.2.5 COVERT ---------- 47
6.2.6 SPOT ---------- 48
6.2.7 CAMERA ---------- 48

CONTENT

6.3 RECORD ---- 49
6.3.1 RECORD SETUP ---- 49
6.3.2 RECORD PROGRAM ---- 50
6.3.3 IMAGE QUALITY ---- 56
6.3.4 AUDIO RECORD ---- 57
6.3.5 REPEAT RECORD ---- 58
6.3.6 PLAY MODE ---- 58
6.3.7 BACKUP MODE ---- 58
6.3.8 HOLIDAY ---- 59

6.4 EVENT ---- 60
6.4.1 MOTION DETECTION ---- 60
6.4.2 EVENT SCREEN MODE ---- 61
6.4.3 EVENT CHECK ---- 61
6.4.4 EVENT MESSAGE ---- 61
6.4.5 EVENT MESSAGE RESET ---- 61
6.4.6 EVENT BUZZER ---- 62
6.4.7 SENSOR INPUT ---- 62
6.4.8 RELAY OUTPUT ---- 63

6.5 SYSTEM ---- 64
6.5.1 HDD ---- 64
6.5.2 CLOCK ---- 66
6.5.3 VIDEO STANDARD ---- 67
6.5.4 LANGUAGE ---- 68
6.5.5 REMOTE CONTROL ID ---- 68
6.5.6 KEY SOUND ---- 68
6.5.7 ADVANCE SETUP ---- 68
6.5.7.1 PASSWORD CHECK ---- 69
6.5.7.4 DVR MENU SET ---- 69
6.5.8 FIRMWARE UPGRADE ---- 71

6.6 LINK ---- 72
6.6.1 NETWORK ---- 72
6.6.2 RS232C ---- 75
6.6.3 RS485 ---- 75
6.6.4 PTZ ---- 76
6.6.5 E-MAIL ---- 76

6.7 SEARCH ---- 79

6.8 COPY ---- 79

6.9 EXIT ---- 80

7. EXTERNAL TERMINAL INFORMATION ---- 81

7.1~2 RS-485 / T.ADJ ---- 81
7.3~4 RELAYOUT / ALARM ---- 82
7.5~6 VGA / SERIAL ---- 83
7.7~8 ETHERNET/USB ---- 84

8. SPECIFICATIONS ---- 85

9. 256 CAMERA INTEGRATION SYSTEM ---- 88

10. HDD INSTALLATION ---------- **89**

10.1 INTERNAL HDD INSTALLATION ---------- 89
10.2 DVD±RW(or CD-RW) installation---------- 92

11. NETWORK VIEWER ---------- **94**

11.1 SYSTEM REQUIREMENT ---------- 94
11.2 Be sure to setup THREE of files together when you execute the viewer program PC---- 94
11.3 INSTALLING THE DVR VIEWER ---------- 95
11.4 DVR VIEWER - LAYOUT ---------- 96
11.5 DVR VIEWER - LIVE MODE ---------- 112
11.6 DVR VIEWER - PLAYBACK MODE ---------- 114
11.7 DVR PALYER - SETUP ---------- 121

APPENDIX---------- **133**

Chapter 1 Features

Operation

Playback, recording, backup and transmission simultaneously
Real time single or multi-screen display
Pan & Tilt, 2X digital zoom and PIP display
Easy operation by IR remote controller, external keypad controller and USB 2.0 Mouse
Hidden camera option (covert)
User-friendly setup menu and operation

Playback

Multi-screen playback (Full/4/6/7/9/10/13/16 split)
Search by date, time and camera
Preview window on event search mode
Playback mode(frame/ field) setup

Recording

Select of the recording quality grade for each channel
Individual camera frame rate can be set by user
The recording speed of max. 120 images per second (NTSC)
Manual, schedule and event recording
Pre & Post-alarm recording
Select of the recording image size for each channel
4 channels audio recording
Select of the event mode for each channel

Network

Live and playback viewing
Remote control on a networked PC with the exclusive client viewer
(The viewer software is supplied for free.)
Flexible connections - 10/ 100 Mbps Ethernet/ ADSL
Up to 16 network users access simultaneously
Audio transmission between DVR and Client
Dynamic IP is available

External storage

Automatic backup to selected backup HDD (Event backup/ Mirroring)
Own external storage device to extend the HDD capacity
You can install 10 HDDs in 1 external HDD Bay and connect up to 4 Bay with this DVR. (250GB X 40HDDs = 10TB, 500GB X 40HDD = 20TB, 1TB X 40HDD = 40TB)

Audio

4 channels audio recording in real time
Audio channel select for each channel

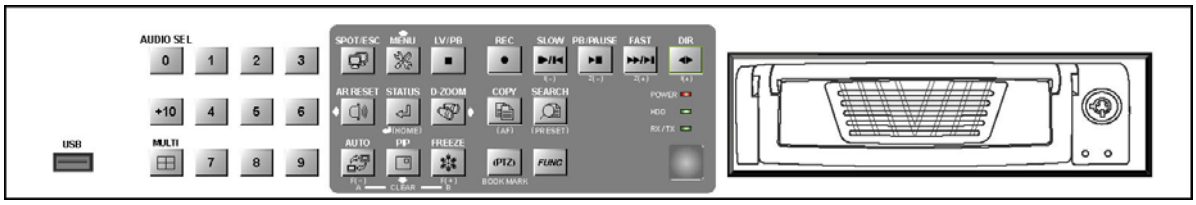
Copy

USB 2.0 external HDD
USB 2.0 memory stick
CD-R/ CD-RW/ DVD±RW/ DVD-RAM (optional)

General

Software downloading facility via network and USB memory stick
Auto detection of PAL / NTSC
Built-in software Watchdog
Automatic time adjustment through Network
VGA output for PC monitor(Optional)
Optional external CDRW or DVD±RW
Loop-through connections
Support of multiple Languages
Graphic User Interface for the MENU screen
Analog Spot

Chapter 2 Packing Detail

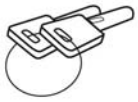


1. DVR

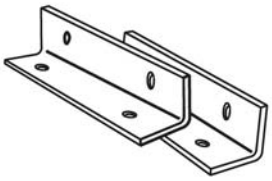
2. Network Viewer Program CD

3. User's Manual

4. Remote controller

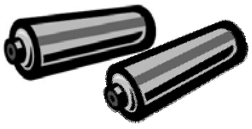


5. R-HDD Rack Key



6 Rack Mounts

7. AC Adaptor & Power Cord



8. Batteries

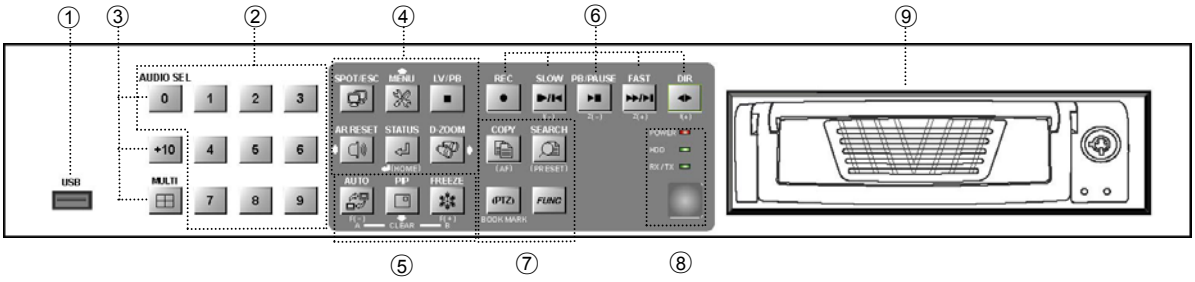
9. HDD Screws

10. Audio cable

CONTENTS
1. DVR
2. Network Viewer Program CD
3. User's Manual
4. Remote Controller
5. R-HDD Rack Key
6. Rack Mounts
7. AC Adaptor & Power Cord
8. Batteries (For Remote Controller)
9. HDD Screws
10. Audio cable

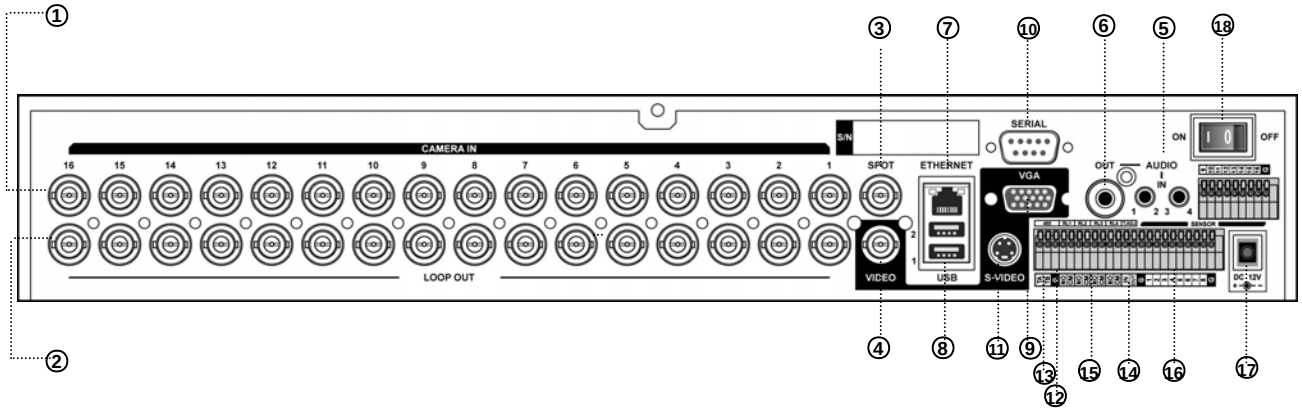
Chapter 3 Location and Control

3.1 FRONT PANEL CONTROLS



Name	Description
① USB	USB 2.0 port to use a USB memory stick, Mouse or USB external devices
② CHANNEL SELECT	Buttons to select the camera or input the password
③ AUDIO SEL / 0	Audio select button / Button to select the camera or input the password
③ (+10)	Button to select the camera(+10)+(0~6) 10/11/12/13/14/15/16
③ MULTI	Multi-channel select button
④ SPOT / ESC	Button to control spot monitor/ return to the previous menu/ Not use password
④ MENU / ▲	Button to display the setup menu/ move to the upper direction / TILT up in PTZ mode
④ LV / PB	Button to convert the screen into real view mode or into playback mode
④ ALARM RESET / ◀	Button to release the event signal/ move the left direction/ PAN left in PTZ mode
④ ↵ / STATUS/ (HOME)	Button to enter the next step/ display the status/ return to home position in PTZ mode
④ D-ZOOM / ▶	Button to control the digital zoom/ move to the right direction/ PAN right in PTZ mode
⑤ AUTO / F / (-) / A	Button to begin the auto sequence mode/ decrease the value/ focus in PTZ mode/ Button to set the section repetition playback
⑤ PIP / ▼ / CLEAR	Button to control PIP function/ move to the lower direction/ TILT down in PTZ mode/ Button to release the section repetition playback
⑤ FREEZE / F / (+) / B	Button freeze image/ increase the value/ focus in PTZ mode/ Button to set the section repetition playback
⑥ REC(●)	Button to begin and stop recording
⑥ SLOW(▮▶)/ ⏮	Button to slow down the playback speed/ Backward playback button in pause mode
⑥ PB / PAUSE(▶▮▮)/ (Z-)	Button to start the playback. If press again, a still picture is displayed during playback./ Zoom out of PTZ camera
⑥ FAST(▶▶)/⏭ / (Z+)	Button to speed up the playback speed/ Forward playback button in pause mode/ Zoom in of PTZ camera
⑥ DIRECTION(◀▶)	Button to change the direction of playback/ Last Record backward playback
⑦ COPY(AF)	Button to display the copy menu/ automatically focus in PTZ mode
⑦ SEARCH(PRESET)	Button to display the search menu/ preset in PTZ mode
⑦ PTZ/ BOOKMARK	Button to control PTZ camera/ Bookmark marking button
⑦ FUNCTION	Relay4 User action(FUNCTION + “+” / “-“)/ PTZ speed control
⑧ LED Display	Display of the status of power(POWER), HDD(HDD) and network(RX / TX)
⑧ Remote Sensor	Input sensor for the remote controller
⑨ R.HDD RACK	Removable HDD rack (Option: Built-in CD-RW or DVD±RW)

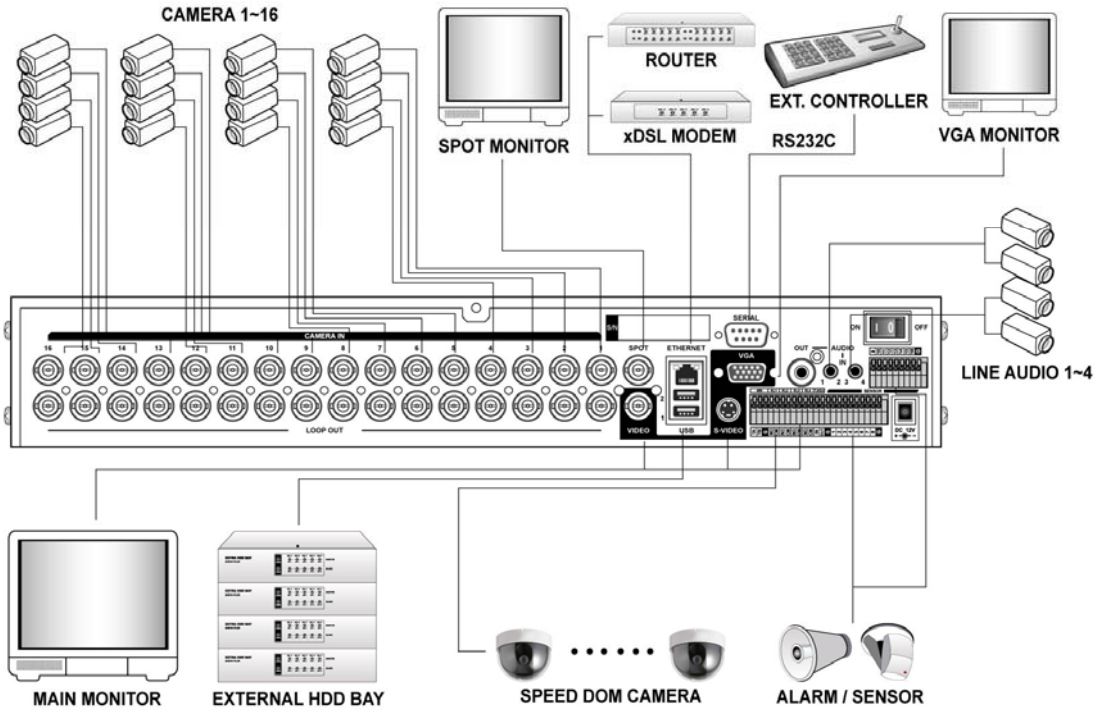
3.2 REAR PANEL CONNECTORS



Name	Description
① CAMERA IN	BNC input ports for cameras
② CAMERA OUT	BNC output(looping) ports for cameras
③ SPOT	BNC output port for spot monitor
④ VIDEO OUT	BNC output port for the main monitor (Same as the RCA video output of the front panel)
⑤ AUDIO IN	Stereo Jack input ports for an audio signal(4CH Line input)
⑥ AUDIO OUT	Stereo Jack output port for an audio signal
⑦ ETHERNET	Port for 10/ 100Mbps Ethernet/ xDSL
⑧ USB1 / USB2	USB 2.0 ports to use USB memory stick, Mouse or the external devices
⑨ VGA OUT	Output port for the VGA monitor This DVR is compatible with TFT LCD monitor in PAL mode.
⑩ SERIAL	Connector for debugging. This DVR can be controlled by the other device through this connector(RS-232C).
⑪ S-VIDEO OUT	Output port for the S-video output
⑫ GROUND	Earth ground port to connect with the external devices
⑬ RS-485	Terminal blocks of RS-485
⑭ T-ADJ	Input and output terminal blocks for time synchronization among DVRs
⑮ RELAY OUT	4 relay output terminal blocks
⑯ ALARM IN	Input terminal blocks for alarm signals
⑰ POWER IN	Socket for a 12V/6.67A power cord
⑱ POWER SWITCH	AC Power switch

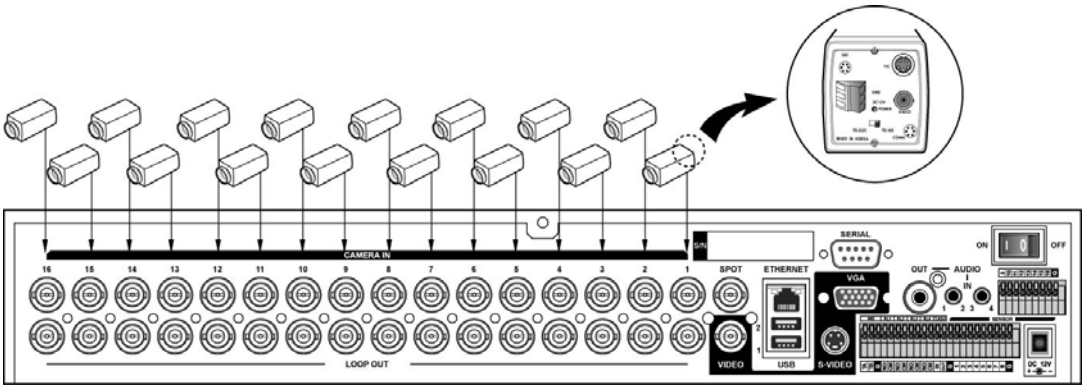
Chapter 4 Installation

4.1 TOTAL CONNECTION LAY-OUT



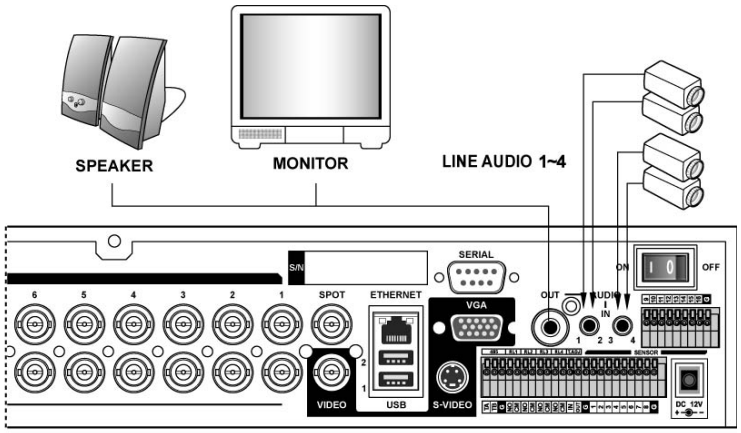
4.2 INDIVIDUAL CONNECTION

4.2.1 Camera



* Connect a female BNC connector of each camera to a male BNC connector, “CAMERA IN” port.
* Connect the looping BNC output to other inputs as required

4.2.2 Audio (*Refer to the specification)



Audio Input
- AUDIO IN : Connect the RCA Line Jack of the relevant equipment (for example, a camera with a built-in microphone) to the AUDIO IN port

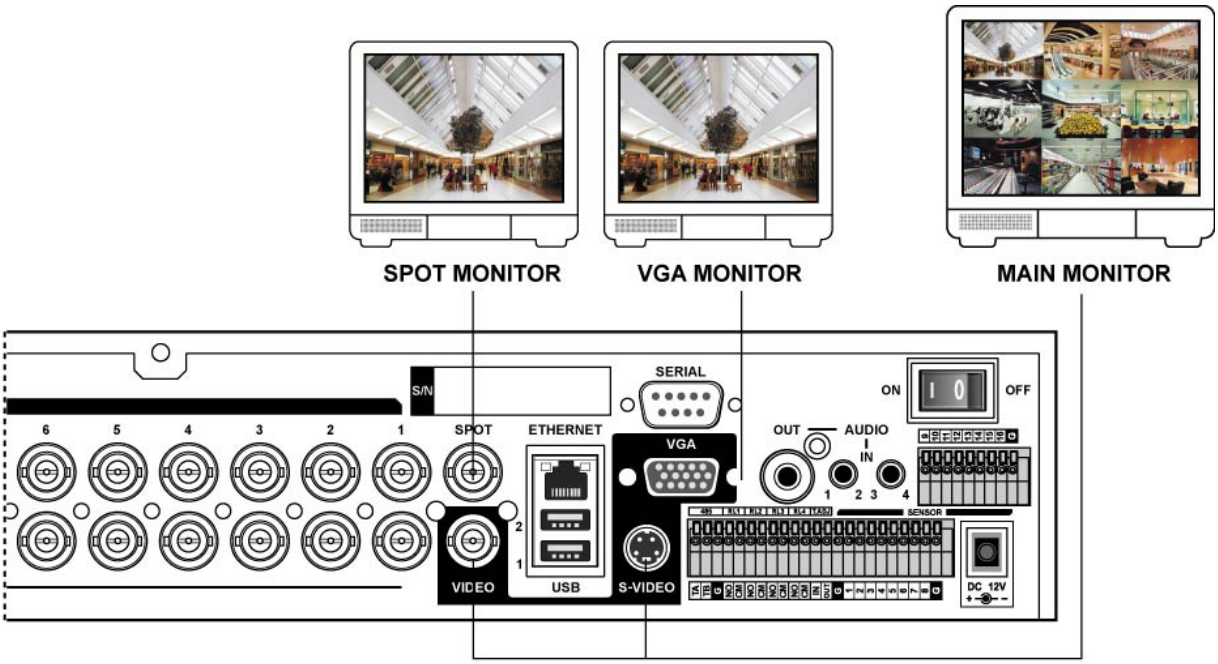
Audio Output
- AUDIO OUT : Connect the RCA Line output to a monitor with a built-in speaker

NOTE

This DVR can be connected only with a line audio and not support a microphone for audio input and output.
To record audio should be enable in the AUDIO setup at the MENU setup.

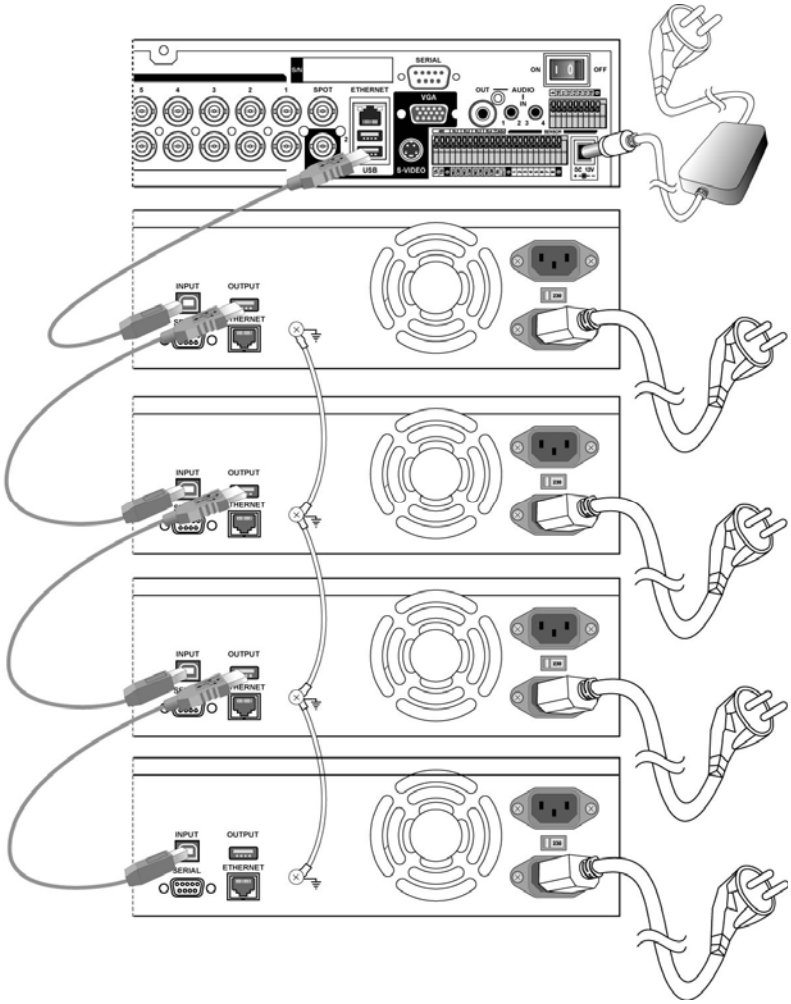
You can select audio channels regardless of cameras.
** Please refer to 5.2.13 AUDIO SELECT.

4.2.3 Monitor



- Connect the female BNC for monitor output.
- Connect the male Y/C cable socket for S-VIDEO monitor output.

4.2.4 External HDD Bay



(USB output)

INSTALLATION PROCESS.

1) Turn off the power of DVR.
2) Connect the grounding conductor between DVR and external HDD bay.
3) Connect the USB cable between DVR and external HDD bay.
4) Connect the power cords of DVR and each external HDD bay.
5) Plug the power cords of DVR and each external HDD bay.
6) Turn the power of DVR on.
7) After booting the system automatically, press the STATUS button and check the system information of setting the HDD. (If the HDD is not recognized properly, turn the power of DVR off first and check the cable connections referring to user's manual of external bay.

CAUTION - Do not disjoint the external HDD Bay from DVR in normal operating condition.

NOTE - Please refer to the external bay manual for more information.

4.2.5 USB 2.0 ports

① Three USB ports are provided to connect a USB memory stick, One USB port is on the front panel and the other two are on the rear panel.

② A USB mouse can be connected to one of the ports. You can use the mouse to navigate through the screens and menus much like you would on a computer.

INSTALLATION PROCESS.

Connect the desired device with DVR as the above pictures.
(For example, USB memory stick, mouse, external storage device etc.)

NOTE: You have to turn on the power of USB storage devices after DVR is booted completely.

Chapter 5 Operation

5.1 FACTORY DEFAULT

*** 16CH DVR**

MENU Setup>

QUICK SETUP>

QUICK SETUP……..OFF
IMAGE SIZE……...720x240
RECORD FRAME……60
EVENT……...ALL
PRE RECORD TIME……..5SEC
POST RECORD TIME……...10SEC
IMAGE QUALITY…..……FINE
AUDIO RECORD……OFF
REMOTE CONTROL ID……..ALL

SCREEN>

AUTO SEQUENCE
- QUAD-A~E/ SIX/ SEVEN/
- NINE-A~B/ TEN/ THIRTEEN/ SIXTEEN….3SEC
- ADD AUTO SINGLE……...OFF
- AUTO-SINGLE CH1~16……..3SEC
- VIDEO LOSS SKIP..……..ON

DISPLAY
- HDD FREE SPACE..……..ON
- HDD FREE SPACE MODE..…..……..PERCENT
- RECORD STATUS..……...ON
- CLOCK DISPLAY……..……ON
- DATE & TIME MODE..…… YY/MM/DD
- TITLE DISPLAY……...…..ON
- TITLE MODE……..…....TEXT
- BORDER COLOR……..…WHITE
- REMOTE CONTROL ID..……..…OFF

TITLE
- CH 1~CH 16……CH 1~CH16

MULTI SCREEN
- MULTI 4E……2/ 4/ 6/ 8
- MULTI 6……1/ 2/ 3/ 4/ 5/ 6
- MULTI 7……1/ 2/ 3/ 4/ 5/ 6/ 7
- MULTI 9B……..10/11/12/13/14/15/16/1/2
- MULTI 10……1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ 9/ 10
- MULTI 13……1/ 2/ 3/ 4/ 5/ 6/ 7/ 8/ 9/ 10/ 11/ 12/ 13

COVERT
- CH 1~16……..…..OFF
- SELECT……LV&PB&NW
- COVERT TITLE DISPLAY……OFF

SPOT
- SPOT MODE……MANUAL
- SPOT SEQUENCE TIME…….…...3SEC
- VIDEO LOSS SKIP……ON

CAMERA
- CHANNEL …….... 1

BRIGHTNESS …….. 50%
CONTRAST…….. 50%
HUE …… 50%
SATURATION…….. 50%

RECORD>

RECORD SETUP
RECORD PROGRAM……....6
RECORD PROGRAM (Refer to 6.3.2)
IMAGE QUALITY
RECORD QUALITY…….....FINE
AUDIO RECORD
AUDIO 1~4……..…….....OFF
REPEAT RECORD
REPEAT RECORD……...……..ON
REPEAT RECORD ALARM…….5%
PLAY MODE…….....FRAME
BACKUP MODE..…….....OFF
HOLIDAY
HOLIDAY RECORD…….…OFF
HOLIDAY SETUP(MM/DD) ……..…..00/00

EVENT>

MOTION DETECTION
CHANNEL……..…..1
SENSITIVITY……..……5
EVENT SCREEN MODE……..……SCREEN HOLD
EVENT CHECK……..……OFF
EVENT MESSAGE..…….....OFF
EVENT MESSAGE RESET…….....….5SEC
EVENT BUZZER..……..…..OFF
SENSOR INPUT
SENSOR 01~16 INPUT TYPE..……..NOT USED
RELAY OUTPUT
CH 1~16: ALARM/ V-LOSS/ MOTION..……1/ 2/ 3
RELAY 1~3 OUTPUT TIME..……..……1SEC
RELAY 4 SELECT…..……..……POWER

SYSTEM>

HDD
HDD CONFIGURATION
REMOVABLE/ FIXED-01~02..……..… NO HDD
REC HDD INITIALIZE…..……..……NO
BACKUP HDD INITIALIZE…….NO
CLOCK
DATE & TIME
TIME ADJUST
INTERNET TIME ADJUST..…… OFF
SELECT TIME SERVER …….. NONE
SELECT TIME ZONE …….. GMT+09:00
DAYLIGHT SAVING TIME..…….…. OFF
START TIME …… APR/1ST/SUN/02/AM
END TIME ……. OCT/4TH/SUN/02/AM
VIDEO STANDARD……..……...AUTO
LANGUAGE……..……..…ENGLISH
REMOTE CONTROL ID……..……..…… ALL
KEY ECHO…..……..……..……ON

ADVANCED SETUP
- PASSWORD CHECK……OFF
- SET PASSWORD
  - ADMIN PASSWORD…..……..11111111
  - USER1 PASSWORD……..……..22222222
  - USER2 PASSWORD……..……..33333333
  - USER3 PASSWORD……..……..44444444
  - USER4 PASSWORD……..……..55555555
- USER AUTHORITY

AUTHORITY	U1	U2	U3	U4
REC	OFF	OFF	OFF	OFF
SEARCH&PLAY	OFF	OFF	OFF	OFF
COPY	OFF	OFF	OFF	OFF
LIVE AUDIO	OFF	OFF	OFF	OFF
DVR SETUP	OFF	OFF	OFF	OFF
DVR STATUS	OFF	OFF	OFF	OFF
PTZ CONTROL	OFF	OFF	OFF	OFF

- DVR MENU SETUP
  - MENU INITIALIZE…..……..……..NO
  - LOAD MENU FROM FILE
  - SAVE MENU TO FILE

FIRMWARE UPGRADE……..……NO

LINK>

NETWORK
- DHCP…….……OFF
- IP ADDRESS……..192 168 000 002
- SUBNET MASK……..255 255 255 000
- GATEWAY……..192 168 000 001
- DNS……..000 000 000 000
- PORT……..5400
- DYNAMIC IP SERVER……..211.174.251.155
- BACKUP IP SERVER……...211.174.251.160
- NETWORK FRAME.....STILL

RS232C
- BAUD RATE..……..115200
- DATA BIT……..……8
- PARITY BIT……..……NONE
- STOP BIT……..……..……1

RS485
- SYSTEM ID……..……..……1
- BAUD RATE..……..……..115200
- DATA BIT……..……..……8
- PARITY BIT……..……..……NONE
- STOP BIT……..……..……1

PTZ
- CH 1~16: MODEL/SPEED/ID…..……..NONE/9600/1

E-MAIL
- SEND E-MAIL…….. OFF
- SMTP SERVER…… NONE
- DVR E-MAIL ADDR…… NONE
- OPTIONAL
  - USER ID…….. NONE
  - PASSWORD…… NONE
  - E-MAIL ADDR 1~10……NONE

SEARCH>

CALENDAR SEARCH
SEARCH&COPY
HDD ID…… NORMAL
CHANNEL…… ALL
TIME SEARCH
HDD ID…… NORMAL
CHANNEL…… ALL
EVENT SEARCH
HDD ID…… NORMAL
CHANNEL…… ALL
EVENT…… ALL
BLOCK SEARCH
HDD ID…… NORMAL
FILE SEARCH
MEDIA…….. USB_FRONT
BOOKMARK SEARCH
LOG FILE

COPY>

COPY
MEDIA…….. USB_FRONT
HDD ID…… NORMAL
CHANNEL…… ALL CHANNEL SELECT
COPY STATUS
COPY START/ END/ CUR TIME……2000/00/00 00:00:00
MEDIA FORMAT
FORMAT MEDIA..…… USB_FRONT
MEDIA FORMAT
MEDIA INFORMATION
MEDIA TOTAL …… 0MB

EXIT>

EXIT ……SAVE ONLY

5.2 BUTTON CONTROLS

5.2.1 POWER ON /OFF

After the connection of power cord and other devices with this DVR, turn the power on.

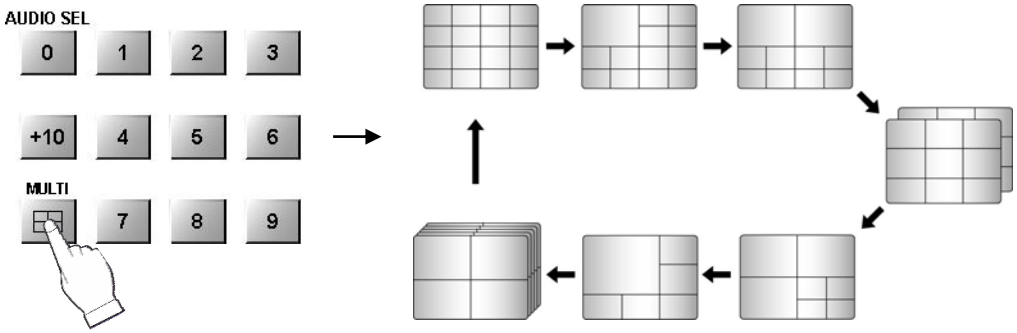
a. The video signal system (NTSC or PAL) is set to AUTO.
b. Power Failure Recovery
This DVR automatically reverts back to programmed record parameters upon power restoration.

- If there is no video signal at the video signal system is “AUTO”, the video signal system is set to NTSC. Do not input the PAL type video signal or it may cause the DVR’s malfunction. In this case, turn off and on again.

5.2.2 SCREEN DISPLAY

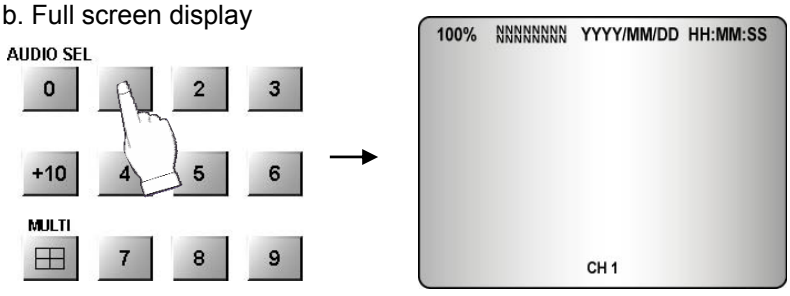
5.2.2.1 Multi-Display & Full Screen display

a. Multi display



To change a single camera display to the multi camera, press the MULTI button.

b. Full screen display

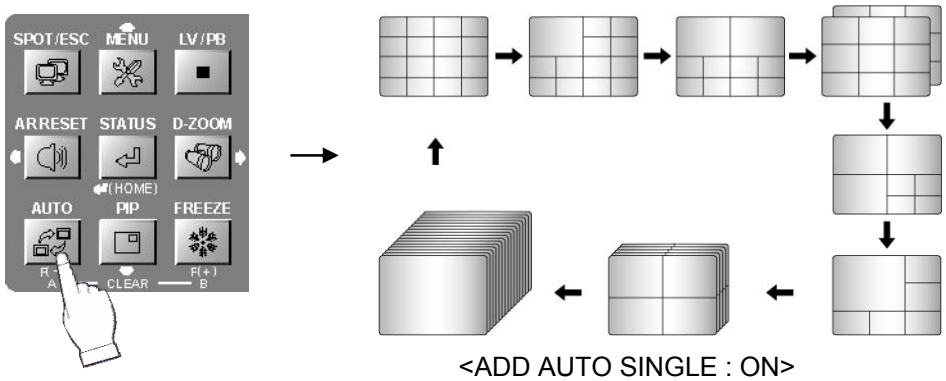


Press the desired camera number button to display on the monitor.

Use the **+10 Button** when you select two digit camera numbers.
EX) Camera Number 12 = Press the **+10 Button**, and then press the No. **2 Button**.

CAMERA/NUMBER INPUT buttons are used to input the password in the password lock function.

5.2.2.2 Auto Sequence Display

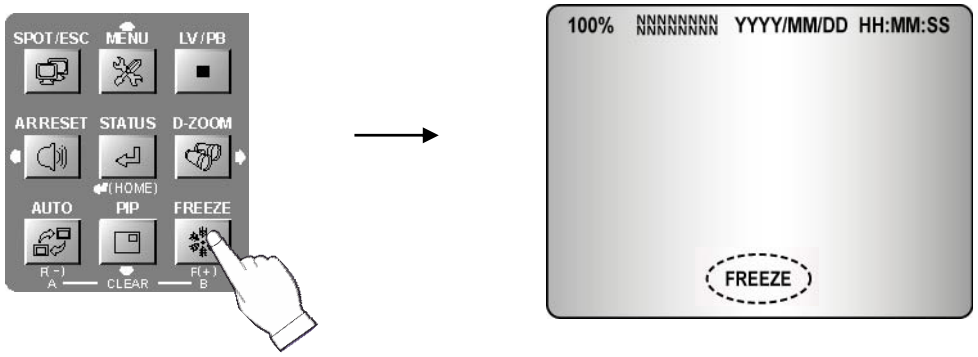


<ADD AUTO SINGLE : ON>

- Press the AUTO button, each screen display will be automatically switching according to the AUTO SEQUENCE setup.
- If you set up “ADD AUTO SINGLE : OFF” in the AUTO SEQUENCE setup menu, the single display will be skipped.
- To view the single display, set up “ADD AUTO SINGLE : ON” in the AUTO SEQUENCE setup menu and the single display will be included in the auto sequence display.
- Press the AUTO button again to exit the AUTO mode.

If an event takes place, the AUTO SEQUENCE mode will be cancelled.
Please refer to the AUTO SEQUENCE of Chapter 6 MENU setup for more information.

5.2.2.3 Freeze



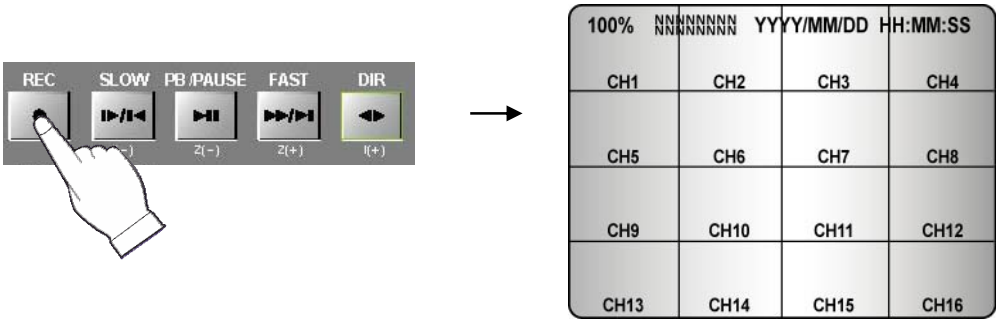
MULTI SCREEN MODE
At the Multi display mode, press the FREEZE button and then select the desired camera number.
Press the FREEZE button again to release the FREEZE mode.

SINGLE SCREEN MODE
Press the FREEZE button after the desired channel is selected.
Press the FREEZE button again to release the FREEZE mode.

- If you press the MULTI button after pressing the FREEZE button, all the channels will display still images.
- FREEZE function is not available, when auto mode is selected.
  (Refer to AUTO SEQUENCE in the SCREEN menu for further information)

5.2.3 RECORD

Press the REC button and the following message will be displayed as below;



MANUAL MODE
Press the REC button to begin recording.
To stop recording, press the REC button again. The screen will be turned into real time display mode.

SCHEDULE MODE
When Schedule mode is selected, the recording will be automatically executed according to the recording schedule. (Please refer to the SCHEDULE SETUP in the RECORD setup.)

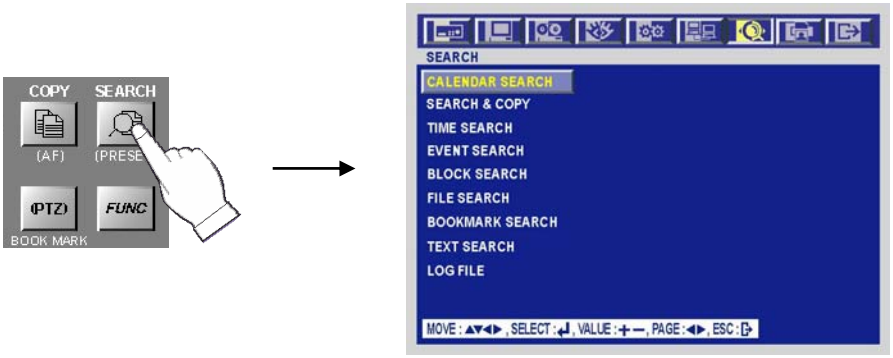
The record indication (**NNNNNNNN)** on the screen will be changed according to the type of recording and refer to the following.

- " **N** " : Manual recording status.
- " **S** " : Schedule recording status.
- " **E** " : Event recording status. (Motion detection/ Video loss/ Sensor)
- " - " : Not recording.

- All channels will be displayed by "E" in case of setting by "ALL CHANNELS" in RECORD PROGRAM even if an event happened just on one channel.
- "E" will be displayed because in case of "ALL CHANNELS" mode, this unit enters the event record mode when event happened.
- If a channel has an event, all channels will be recorded by event recording frame rate to be set in RECORD PROGRAM menu.

5.2.4 SEARCH & PLAYBACK

Press the **SEARCH** button, the SEARCH menu screen appears.



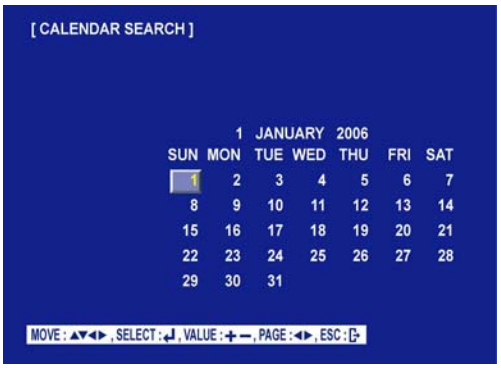
If you press the PLAY button in the real time screen mode, playback will be executed from the end of the previous time search and press the desired channel select button.
To exit the playback mode and see the live screen again, press LV/PB button.

5.2.4.1 CALENDAR SEARCH

At the SEARCH menu;

① Move the cursor to CALENDAR SEARCH using ▲ or ▼ button.

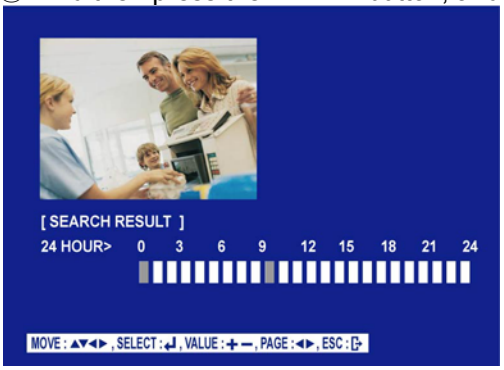
② Press the ENTER button and the CALENDAR SEARCH screen appears.



* The date is displayed by white in case of no data.

③ Move the cursor to the desired position using the ▲ , ▼ , ◀ , ▶ buttons.

④ And then press the ENTER button, and the following screen appears.



⑤ Move the cursor to the desired position using the ◀ , ▶ buttons and then press the ENTER button to play the selected time.

5.2.4.2 SEARCH & COPY

At the SEARCH menu;

① Move the cursor to SEARCH&COPY using ▲ or ▼ button.

② Press the ENTER button and SEARCH&COPY screen appears.

③ Select the desired HDD ID using the (-) or (+) button.

④ Move the cursor to CHANNEL using the ▲ or ▼ button and select the desired channel using the (-) or (+) button.

⑤ Move the cursor to the desired position of SEARCH TIME using the ▲ , ▼ , ◀ , ▶ buttons, and then set up the desired time using the(-), (+) buttons.

⑥ Press the ENTER button and you can playback.

⑦ Press ESC button to go to the previous menu.

⑧ Move the cursor to START COPY and then press the ENTER button to copy.

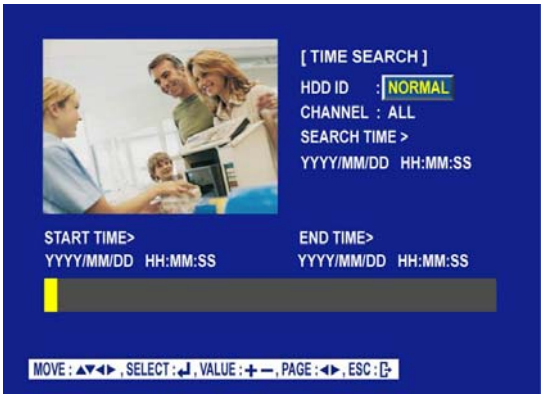
⑨ Enter a password if you want to protect your file.
If you don't want a password, press ESC button to start to copy.

5.2.4.3 TIME SEARCH

At the SEARCH menu;

① Move the cursor to TIME SEARCH using ▲ or ▼ button.

② Press the ENTER button and TIME SEARCH screen appears.



③ Select the desired HDD ID using the (-) or (+) button.

④ Move the cursor to CHANNEL using the ▲ or ▼ button and select the desired channel using the (-) or (+) button.

⑤ Move the cursor to the desired position of SEARCH TIME using the ▲ , ▼ , ◀ , ▶ buttons, and then set up the desired time using the(-), (+) buttons to set the search time.

⑥ Press the ENTER button and you can playback.

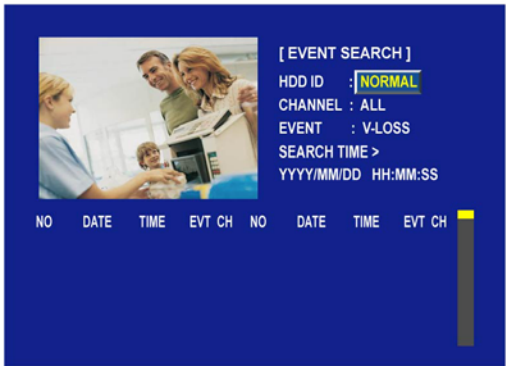
⑦ Press the LV/PB button to exit this menu.

5.2.4.4 EVENT SEARCH

At the SEARCH menu;

① Move the cursor to EVENT SEARCH using ▲ or ▼ button.

② Press the ENTER button and the EVENT SEARCH menu screen appears.



③ Select the desired HDD ID using the (-) or (+) button.

④ Move the cursor to CHANNEL using the ▲ or ▼ button and select the desired channel using the (-) or (+) button.

⑤ Move the cursor to EVENT using the ▲ or ▼ button and select the event type to search using the (-) or (+) button.

⑥ Move the cursor to the desired position of SEARCH TIME using the ▲ ,▼ ,◀ ,▶ buttons, and then set up the desired time using the(-), (+) buttons.

⑦ Press the ENTER button, and the event list searched appears.

⑧ When the event list appears on the screen, select the desired list using ▲ ,▼ buttons and press the ENTER button for the playback.

- When video loss is detected, up to five seconds of **pre-recording** data is stored on the HDD and the details will be listed in the EVENT LIST. The beep sounds and the LED of the ALARM RESET button will flicker. Press the ALARM RESET button to remove this signal.

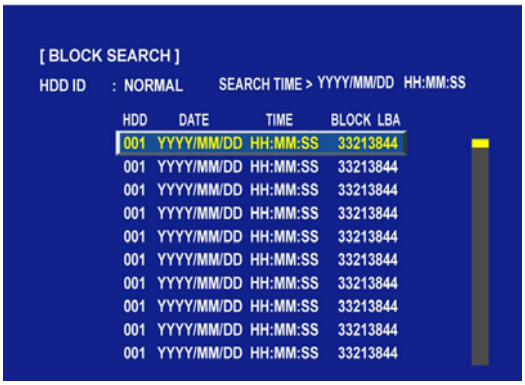
- When the unit receives a signal from the sensor input, DVR begins to record the input data according to the PRE/POST TIME in the RECORD setup and the details will be listed in the EVENT LIST.

5.2.4.5 BLOCK SEARCH

At the SEARCH menu;

① Move the cursor to BLOCK SEARCH using ▲ or ▼ button.

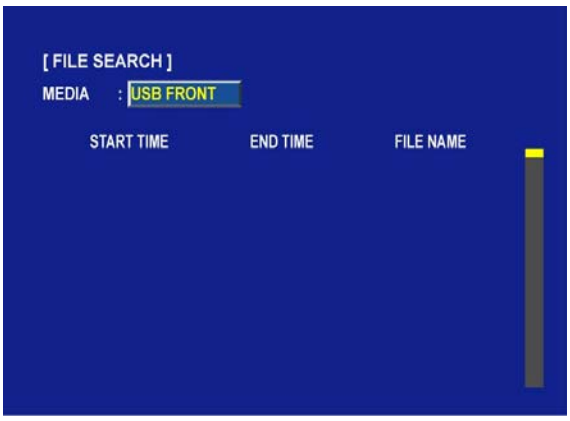
② Press the ENTER button and the BLOCK SEARCH menu screen appears.

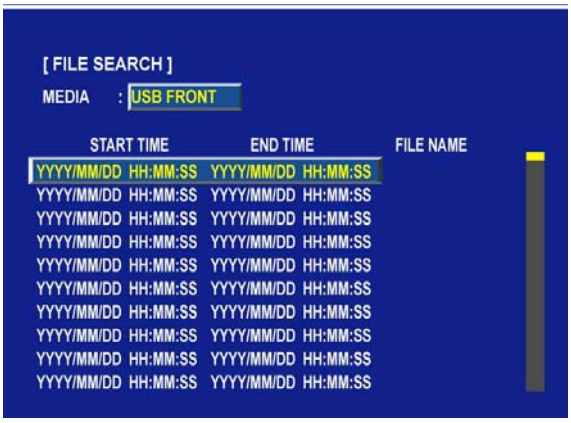


③ Select the desired HDD ID using the (-) or (+) button.
④ Move the cursor to the desired position of SEARCH TIME using the ▲, ▼, ◀, ▶ buttons, and then set up the desired time using the(-), (+) buttons.
⑤ Press the ENTER, and the list searched appears.
⑥ When the list appears on the screen, select the desired list using ▲, ▼ buttons and press the ENTER button for the playback.

5.2.4.6 FILE SEARCH

At the SEARCH menu;
① Move the cursor to FILE SEARCH using ▲ or ▼ button.
② Press the ENTER button and the FILE SEARCH screen appears.

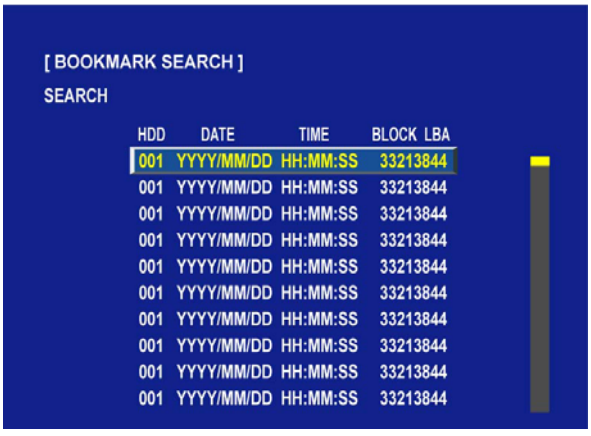




③ Select the desired type of MEDIA using the (-) or (+) button.
④ Press the ENTER button, and the list searched appears.
⑤ When the list appears on the screen, select the desired list using ▲, ▼ buttons.
⑥ Press the ENTER button for the playback.

5.2.4.7 BOOKMARK SEARCH

At the SEARCH menu;
① Move the cursor to BOOKMARK SEARCH using ▲ or ▼ button.
② Press the ENTER button and the BOOKMARK SEARCH screen appears.



③ Press the ENTER button, and the list searched appears.
④ When the list appears on the screen, select the desired list using ▲, ▼ buttons.
⑤ Press the ENTER button for the playback.

<How to make Bookmark list>

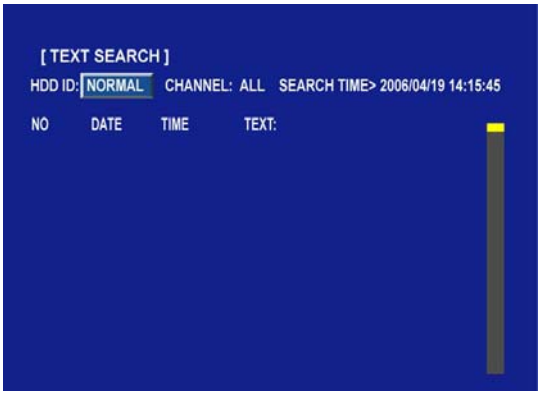
① Press the “PB/PAUSE” button to playback.
② Find the desired image using the SLOW, FAST, DIR buttons.
③ Press the “PB/PAUSE” button to see the still picture of the desired image.
④ Press the “PTZ” button to add the BOOKMARK list.

CAUTION
ⓐ If the internal HDD(s) is initialized, all of the event images will be deleted.
ⓑ When the unit is in normal recording status, the pre-recording will not be executed.

5.2.4.8 TEXT SEARCH

At the SEARCH menu;

① Move the cursor to TEXT SEARCH using ▲ or ▼ button.
② Press the ENTER button and the TEXT SEARCH screen appears.



③ Select the desired HDD ID using the (-) or (+) button.
④ Move the cursor to CHANNEL using the ▲ or ▼ button and select the desired channel using the (-) or (+) button.
⑤ Move the cursor to the desired position of SEARCH TIME using the ▲, ▼, ◀, ▶ buttons, and then set up the desired time using the(-), (+) buttons.
⑥ Move the cursor to TEXT and press the ENTER button and the following screen appears.

⑦ Select the character using the ▲, ▼, ◀, ▶ buttons and then press the ENTER button.
⑧ To exit this CHARACTER TABLE screen, press the ESC button.
⑨ Press the ENTER button and the list searched appears.
⑩ Select the desired list using ▲ or ▼ button and then press the ENTER button to play.

5.2.4.9 LOG FILE

At the SEARCH menu;

① Move the cursor to LOG FILE using ▲or ▼button.

② Press the ENTER button and the LOG FILE screen appears.

③ Move the cursor to the desired position of SEARCH TIME using the ▲, ▼, ◀, ▶ buttons, and then set up the desired time using the(-), (+) buttons.

④ Press the ENTER button, and the list searched appears.

⑤ When the list appears on the screen, select the desired list using ▲,▼ buttons.

5.2.5 PLAY BUTTON INFORMATION

5.2.5.1 SLOW (▮▶) ▮◀

Press this button to make the speed level which is slower than normal speed (X1) and displayed it at the upper left side of screen as below;(If you press this button again, the playback speed will be changed in the order of the below seven speed level)

i. ▮▶ 1/2 - 2 times slower than normal playback speed
ii. ▮▶ 1/4 - 4 times slower than normal playback speed
iii. ▮▶ 1/8 - 8 times slower than normal playback speed
iv. ▮▶ 1/16 - 16 times slower than normal playback speed
v. ▮▶ 1/32 - 32 times slower than normal playback speed
vi. ▮▶ 1/64 - 64 times slower than normal playback speed
vii. ▮▶ 1/128 - 128 times slower than normal playback speed

** ▮◀ : Backward playback still images after pausing of playback image.

5.2.5.2 PB / PAUSE (▶II) (Z-)

Press this button to begin playback at normal speed (X1).
Press this button again to pause the playback.

NOTE If you press the “PB” button to playback, it will playback from the end of played final image.

** **(** Z-) : Zoom out of live view in PTZ mode.

<How to playback a section repeatedly>

① Press the “AUTO” button to set up the A position(starting position) and “(A-)” will be displayed on upper right of the screen.

② And then press the “FREEZE” button to set up the B position(ending position) and “(A-B)” will be displayed on upper right of the screen and played between A to B repeatedly.

<How to release the section repetition playback>

Press the “PIP(CLEAR)” button and section repetition playback will cancel.

5.2.5.3 FAST (▶▶) ▶▮ (Z+)

Press this button to make faster the speed level which is higher than normal speed (X1) and displayed at the upper left side of screen as below:

i. ▶▶ 2 - 2 times faster than normal playback speed
ii. ▶▶ 4 - 4 times faster than normal playback speed
iii. ▶▶ 8 - 8 times faster than normal playback speed
iv. ▶▶ 16 - 16 times faster than normal playback speed
v. ▶▶ 32 - 32 times faster than normal playback speed
vi. ▶▶ 64 - 64 times faster than normal playback speed
vii. ▶▶ 128 - 128 times faster than normal playback speed

(However much data may be recorded can be searched in 3 seconds)

** ▶▮ : Forward playback still images after pausing of playback image.

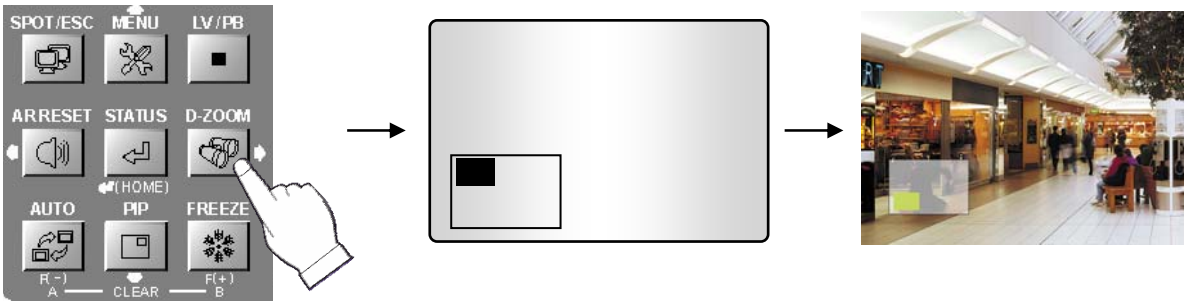
** (Z+) : Zoom in of live view in PTZ mode.

5.2.5.4 DIRECTION (◀▶)

Press this button to change direction to forward (▶)or backward (◀) in playback mode.

NOTE
Press DIR button to make a reversed playback from the end of recorded or played images during the real time display mode.

5.2.6 DIGITAL ZOOM



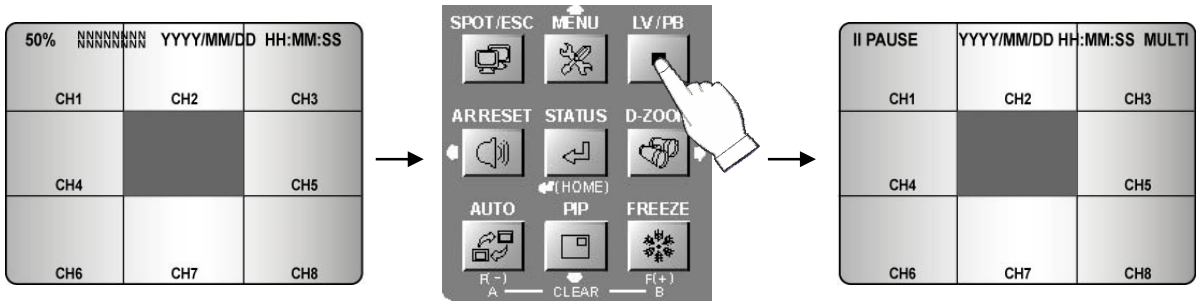
① Press the desired camera number button you wish to display on the monitor.

② Press the D-ZOOM button. The indication screen appears on the main screen.

③ Press the ▲, ▼, ◀, ▶ buttons to select the desired location.

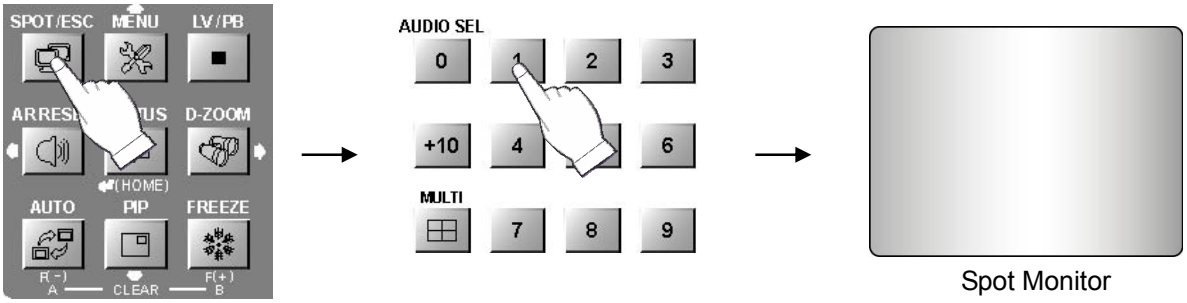
④ Press the ESC button to exit this screen.

5.2.7 SCREEN SELECT(LV/PB)



During the playback, press the **LV/PB** button to convert the screen into real time display mode.
(Press this button again to return to the playback mode.)

5.2.8 SPOT MONITOR



Spot Monitor

Set up the desired mode in “SPOT” of “SCREEN MENU” before executing the SPOT mode.

5.2.8.1 MANUAL MODE

① Press the “SPOT” button on the front panel to toggle “SPOT” mode indicated on the main monitor.
② Press a camera button to display that camera on the spot monitor.
③ OSD of the selected channel will be indicated at the upper left of screen in live mode.

5.2.8.2 EVENT MODE

The Spot monitor will display the channel which an event happened if you select this mode and an event happens.

NOTE
If you press the “SPOT” button after setting this mode, you can control the spot monitor manually.

5.2.8.3 SEQUENCE MODE

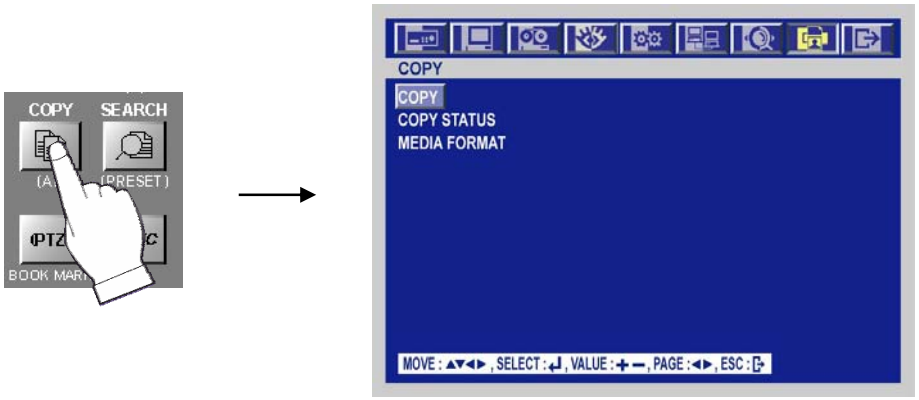
Full screen and split screens will be displayed on the Spot monitor in sequence.

NOTE
If you press the “SPOT” button after setting this mode, you can control the spot monitor manually.

** Please refer to 6.2.6 SPOT of SCREEN.

5.2.9 COPY

Press the COPY button to copy the recorded images into other media and the COPY MENU screen appears.



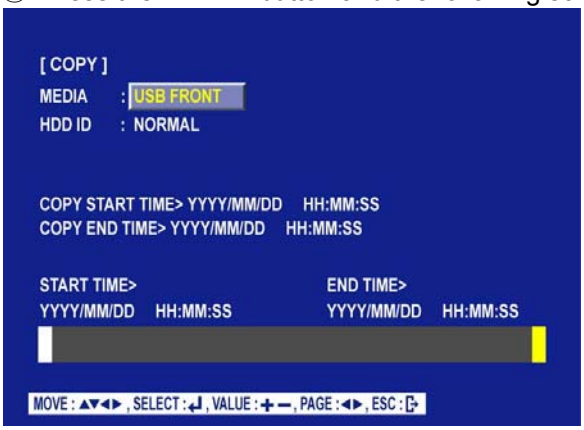
5.2.9.1 COPY

5.2.9.1-1 COPY TO EXTERNAL HDD

At the COPY menu,

① Move the cursor to COPY using the ▲, ▼ buttons.

② Press the ENTER button and the following screen appears.



③ Select the desired MEDIA using (-), (+) buttons.

④ Move the cursor to HDD ID using the ▲, ▼ buttons and select the desired HDD to copy among HDD IDs using the (-), (+) buttons.

⑤ Move the cursor to the desired position of COPY START TIME/ COPY END TIME using the ▲, ▼, ◄, ► buttons and press the (-) or (+) button to set up the time to set up the COPY START TIME and COPY END TIME.
** Scroll bar - It can operate with just Mouse click.

⑥ Press the ENTER button to copy.

** You can see a password input message. You need this password when opening the file in network viewer.

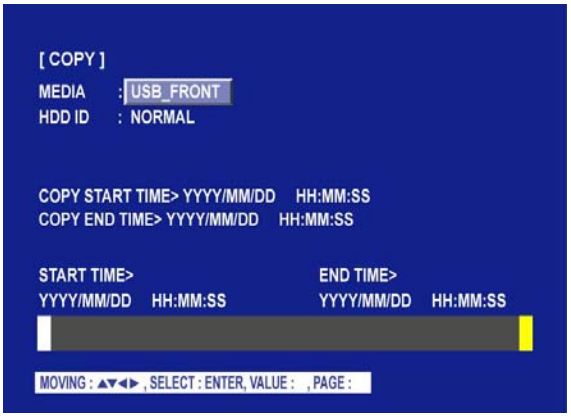
NOTE
When the copy is in process, the copying status (ex. “COPY 30%”) will be displayed on the right side of the monitor.
You can search and playback the copied images in HDD with DVR itself
(Please refer to 5.2.4.6 FILE SEARCH.)
**** You have to format in case of the media to be used in DVR for the first time.**

5.2.9.1-2 COPY TO USB memory stick

At the COPY menu,

① Move the cursor to COPY using the ▲, ▼ buttons.

② Press the ENTER button and the following screen appears.



③ Select the desired MEDIA using (-), (+) buttons.

④ Move the cursor to HDD ID using the ▲, ▼ buttons and select the desired HDD to copy among HDD IDs using the (-), (+) buttons.

⑤ Move the cursor to the desired position of COPY START TIME/ COPY END TIME using the ▲, ▼, ◀, ▶ buttons and press the (-) or (+) button to set up the time to set up the COPY START TIME and COPY END TIME.
** Scroll bar: - It can operate with just Mouse click.

⑥ Press the ENTER button to copy.

** You can see a password input message. You need this password when opening the file in network viewer.

When the copy is in process, the copying status(ex. “COPY 30%”) will be displayed on the right side of the monitor.

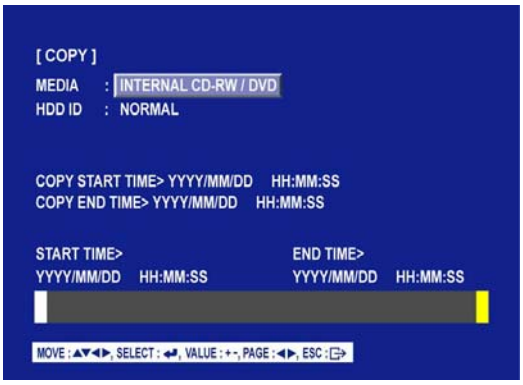
You can search and playback the copied images in USB stick memory with DVR itself as well as PC. (Please refer to 5.2.4.6 FILE SEARCH.)

**** You have to format in case of the media to be used in DVR for the first time.**

5.2.9.1-3 COPY TO CD-R/ CD-RW/ DVD±RW/ DVD-RAM

At the COPY menu,

① Move the cursor to COPY using the ▲, ▼ buttons.
② Press the ENTER button and the following screen appears.
③ Select the desired MEDIA(INTERNAL CD-RW/DVD) (-), (+) buttons.



④ Move the cursor to HDD ID using the ▲, ▼ buttons and select the desired HDD to copy among HDD IDs using the (-), (+) buttons.
⑤ Move the cursor to the desired position of COPY START TIME/ COPY END TIME using the ▲, ▼, ◀, ▶ buttons and press the (-) or (+) button to set up the time to set up the COPY START TIME and COPY END TIME.
** Scroll bar: - It can operate with just Mouse click.
⑥ Press the ENTER button to copy.

** You can see a password input message. You need this password when opening the file in network viewer.

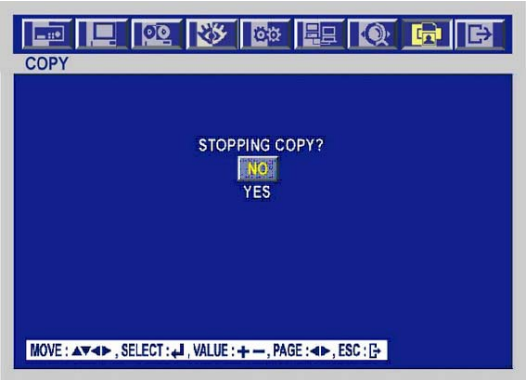
NOTE

- CD-R, CD-RW or DVD±RW/RAM is option and this DVR need the interface board to install a built-in CDR, CD-RW or DVD±RW/RAM.
**** You can't use DVD±R media.**
- If you want a external CD-RW or DVD±RW, must purchase it from a authorized dealer.
- You can search and playback the copied images in CD or DVD with DVR itself as well as PC.
- The 'FileViewer' for the playback of the copied stream is copied to the media also. (Please refer to 5.2.4.6 FILE SEARCH.)

**** You have to format in case of the media to be used in DVR for the first time except CD-R.**

5.2.9.1-4 STOPPING COPY

Press the COPY button to stop copying and the following screen appears.



Move the cursor using the ▲, ▼ buttons and select "YES" or "NO" and then press the ENTER button.

5.2.9.1-5 CONTINUE COPY

① If the media is full or fail during copying, you can see the following message, “MEDIA FULL OR FAIL PRESS [COPY]” message.

② Press the COPY button and the following screen appears.

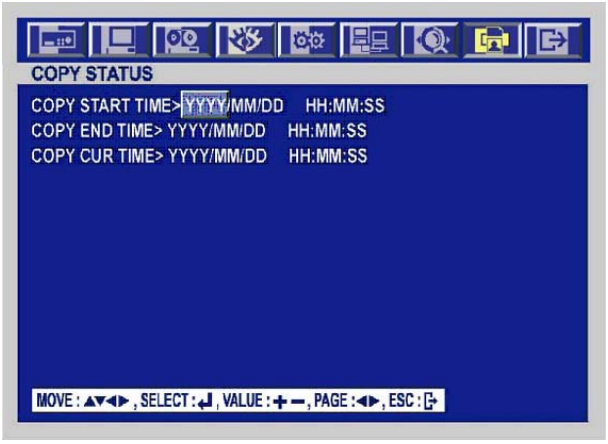
③ Move the cursor to the CONTINUE COPY and then press the ENTER button.

5.2.9.2 COPY STATUS

At the COPY menu,

① Move the cursor to COPY STATUS using the ▲, ▼ buttons.

② Press the ENTER button to see the current copying status and the following screen appears.

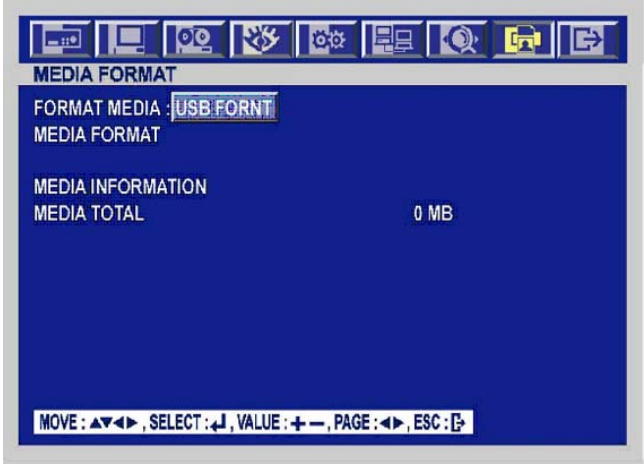


③ Press the ESC button to exit this menu.

CUR TIME : Indicate current copying situation among the total copying data.

5.2.9.3 MEDIA FORMAT

At the COPY menu,
① Move the cursor to MEDIA FORMAT using the ▲ ,▼ buttons.
② Press the ENTER button and the following screen appears.

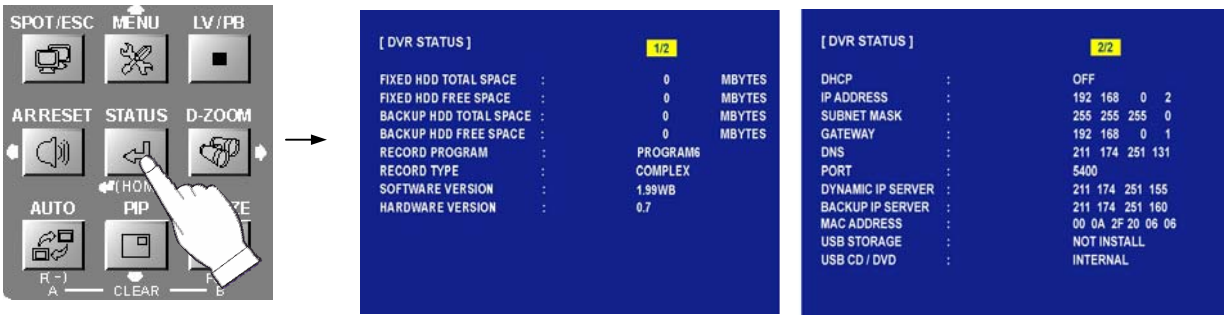


③ Select formatting media using the (-), (+) button.
④ Move the cursor to MEDIA FORMAT and then press the “ENTER” button.
⑤ The message, “FORMATTING” will be displayed while formatting.

NOTE
If you don’t connect any media, you can see the message, “Fail”.

5.2.10 DVR STATUS

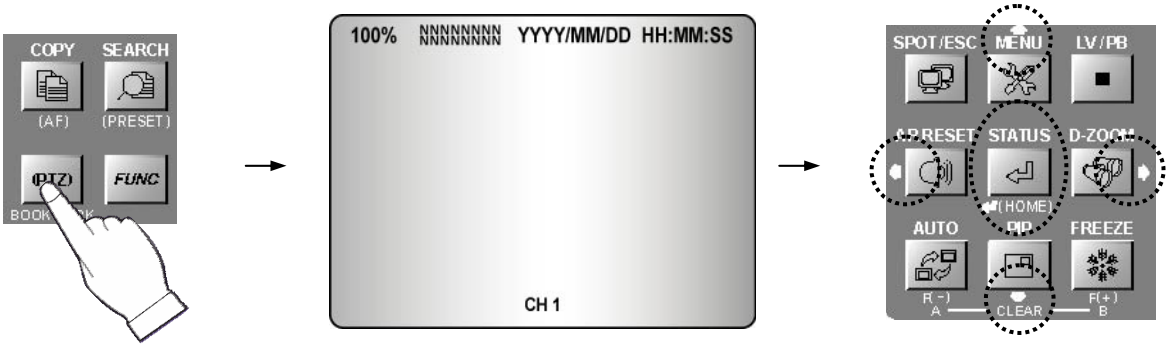
Press the “STATUS” button or double-click the left button of Mouse, The SYSTEM INFOMATION screen will appear. To see the next page, press the ◀ , ▶ or use the wheel scroll of Mouse. Press the STATUS button again to move on next information screen or press the “ESC” button to exit the menu.



5.2.11 PTZ CONTROL

5.2.11.1 PTZ control in live view

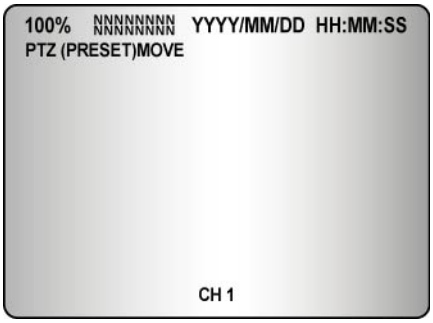
① Press the “PTZ” button to control pan, tilt and zoom functions of PTZ camera and the PTZ channel, model name and ID will be displayed on the left side of the monitor as the following picture.



② Press the desired camera button to be displayed.
③ Use the ◀ or ▶ button to pan left and right and the ▲ or ▼ button to tilt up and down.
④ Press the PLAY, FAST button to zoom in and out.
⑤ Use the (-) or (+) button to focus. Or press the (AF) button for auto focusing.
⑥ Press the PTZ button again to exit the PTZ mode.
** Please refer to 6.6.4 PTZ setup of SCREEN menu.

5.2.11.2 PTZ PRESETTING

① Press the “PTZ” button to enter PTZ mode.
② Press the “PRESET” button to enter PRESET mode and “PTZ(PRESET)MOVE”, OSD will be displayed on the left side of the monitor.

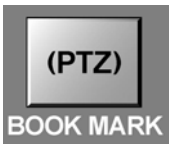


③ Move to the desired preset location using the “NUMBER” buttons.
④ Press the “PRESET” button again and “PTZ(PRESET)SET”, OSD will be displayed on the left side of the monitor.
⑤ Make the desired setting of the PTZ camera using the ▲, ▼, ◀, ▶, (-), (+) buttons.
⑥ Press the “NUMBER” button to set up the revised presetting.

PRESETS

- A preset is a user-defined camera position using pan and tilt, zoom, and focus commands. This DVR has the Programming capacity for 16 preset locations.

5.2.12 FUNCTION BUTTON



You need this button to control “USER” mode of RELAY 4 SELECT.
Please refer to 6.4.8 RELAY OUTPUT.

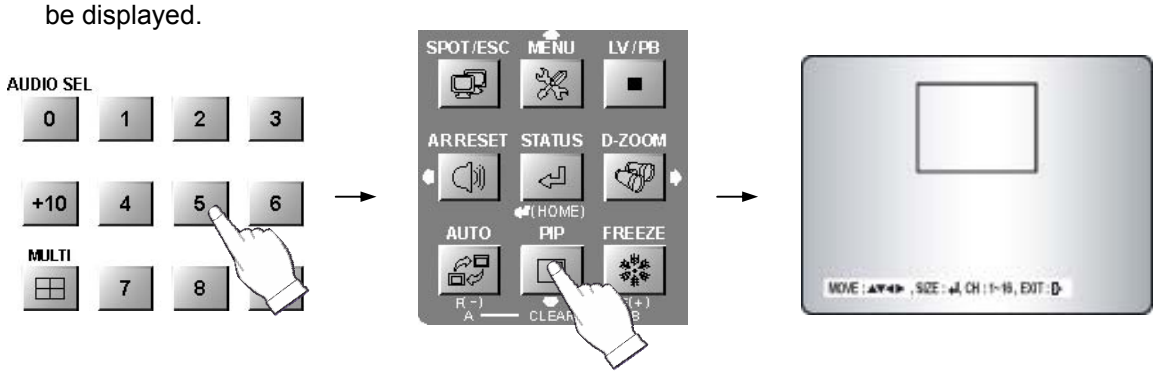
5.2.13 AUDIO SELECT

< Audio select >
You can select audio channels regardless of monitoring screen.
Press the “0(audio select)” button and then press the desired number button and you can hear audio of selected channel regardless of monitoring screen.

< Link of audio and camera >
Press the “0(audio select)” button and then press the “MULTI” button and you can hear audio of selected camera.
That is to say, you can hear CH 1 audio when viewing CH 1,
CH 2 audio when viewing CH 2,
CH 3 audio when viewing CH 3 and
CH 4 audio when viewing CH 4.

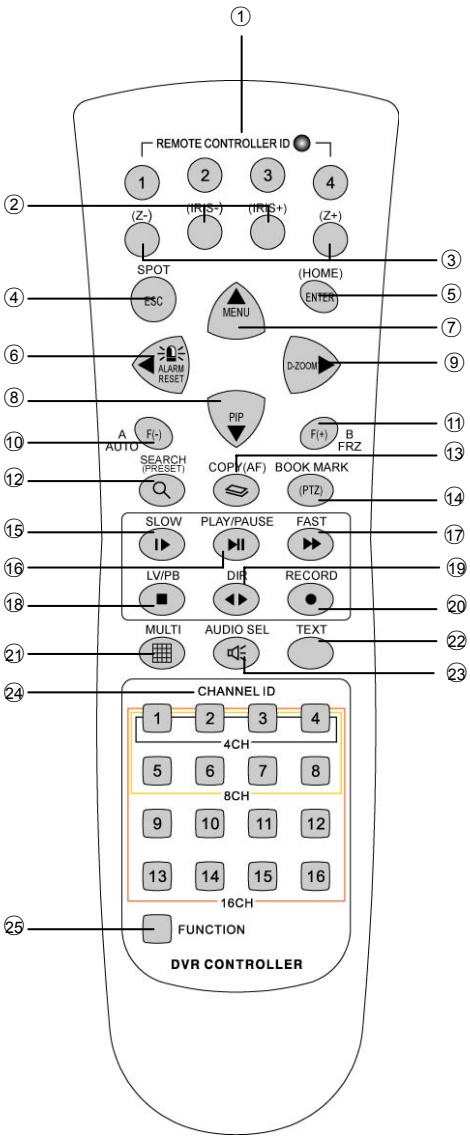
5.2.14 PIP CONTROL

① Select a single camera in live view, and then press the PIP button and the following screen will be displayed.



② Select the desired camera that will be displayed on the PIP screen.
③ Press the ENTER button to make the bigger PIP screen and use the ▲, ▼, ◀, ▶ buttons to move the position of PIP screen.
④ Press the ENTER button to change the PIP Box size x2.
⑤ Press the ESC button to exit this mode.

5.3 REMOTE CONTROLLER



Button Name	Description
① REMOTE CONTROLLER ID	Refer to 6.5.6 REMOTE CONTROLLER ID in the system setup
② (IRIS-/+)	Iris close and open of PTZ / Frame by Frame(field by field) playback
③ (ZOOM-/+)	Zoom in and out of PTZ
④ SPOT / ESC	Enter the spot mode / Return to the previous mode
⑤ ENTER (HOME)	Enter / Go home in PTZ mode
⑥ (◀) / ALARM RESET	Move the cursor in left direction in the setup menu. / Release the event signal
⑦ (▲) / MENU	Move the cursor up to the next line in the setup menu / Display the setup menu
⑧ (▼) / PIP	Move the cursor down to the next line / Enter the PIP mode
⑨ (▶) / D-ZOOM	Move the cursor in right direction in the setup menu. / Control of zoom in and out
⑩ AUTO / (-) / F(-)	Auto sequence / Downward value / Focus control of PTZ
⑪ FREEZE / (+) / F(+)	Freeze / Up-going value / Focus control of PTZ
⑫ SEARCH / (PRESET)	Display the search menu / Enter the preset mode of PTZ
⑬ COPY / (AF)	Display the copy menu / Auto focus of PTZ
⑭ BOOKMARK / (PTZ)	Refer to 5.2.4.7 BOOKMARK SEARCH / Enter the PTZ mode
⑮ SLOW (▮▶)	Press this button to slow-down playback speed
⑯ PLAY / PAUSE (▶▮▮)	Press this button to begin playback. If press again during the playback, a still picture is displayed
⑰ FAST (▶▶)	Press this button to speed-up playback speed
⑱ LV/PB (■)	Convert the screen into real display mode during the playback
⑲ DIR (◀▶)	Change the direction of playback
⑳ RECORD (●)	Begin and stop recording
㉑ MULTI	Display multi-screen
㉒ TEXT	Reserved
㉓ AUDIO SELECT	Audio select button
㉔ CHANNEL ID	Camera number select button
㉕ FUNCTION	Refer to 5.2.12 FUNCTION BUTTON

5.4 MOUSE CONTROL

① Status display	Double-click of the left button
③ Menu display	One-click of the right button
③ Exit	Double-click of the right button
② Value change	Turning the wheel scroll
① Select	Double-click on the item or icon

* You can click the below keys on the MENU screen with a mouse.

Chapter 6 MENU setup

ENTRANCE OF THE MENU SETUP

Press the MENU button for the desired DVR setting.

> You can use the mouse instead of buttons on the front panel of DVR.
> Simply click the desired icon or item in case of using the mouse.
> If there is no input for 1 minute during the menu screen display, the menu screen will be closed automatically without saving of changed value.

6.1 QUICK SETUP

Press the MENU button and the QUICK SETUP menu appears as the following picture.
** This menu is simply used when user want to change just a few important settings.

Select the desired item using the ▲, ▼ buttons and set up the value using the (-), (+) buttons.

6.1.1 QUICK SETUP

Select “ON” or “OFF” using the (-), (+) buttons to use the QUICK SETUP setting.

> **NOTE :** If you select “ON”, RECORD MENU will be disregarded.

6.1.2 IMAGE SIZE

Select the desired IMAGE SIZE for recording using the (-), (+) buttons.

6.1.3 RECORD FRAME

Select the desired frame rate for normal recording using the (-), (+) buttons.
All event channels will be recorded by the setting RECORD FRAME/ 16(in case of 16CH DVR).
For example, if you set RECORD FRAME to 120, 16 each channel will be recorded by 7 ips.
** Please refer to chapter 6.3 RECORD.

6.1.4 EVENT

Select a kind of EVENT using the (-), (+) buttons.
If you want to select all kind of event, choose “ALL” and if you don’t want event recording, choose “OFF”.
The default is “ALL”.

NOTE: Divide event type into three classes(alarm, loss, motion).

6.1.5 PRE RECORD TIME

Select the desired time for pre-recording using the (-), (+) buttons.
When video loss, alarm or motion is detected, the DVR will store pre-recorded data during the selected time.
The pre-recording time can be set from 0 second to 5 second and the default is “5”.

6.1.6 POST RECORD TIME

Select the desired time for post-recording using the (-), (+) buttons.
When video loss, alarm or motion is detected, the DVR will store post-recorded data during the selected period.
The post-recording time can be set from 0 second to 60 second and the default is “10”.

NOTE: The pre- and post- recording is not valid in normal recording mode.

6.1.7 IMAGE QUALITY

Select the desired image quality using the (-), (+) buttons.
There are 3 kinds of image quality.
Please refer to chapter 6.3 RECORD.

6.1.8 AUDIO RECORD

Select “ON” or “OFF” using the (-), (+) buttons to record audio.

6.1.9 REMOTE CONTROL ID

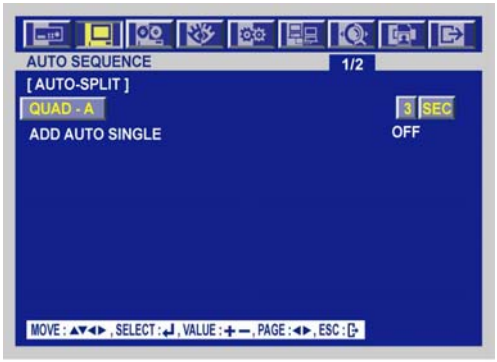
Refer to 6.5.5

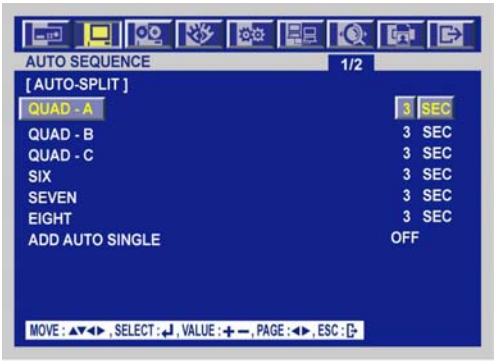
6.2 SCREEN

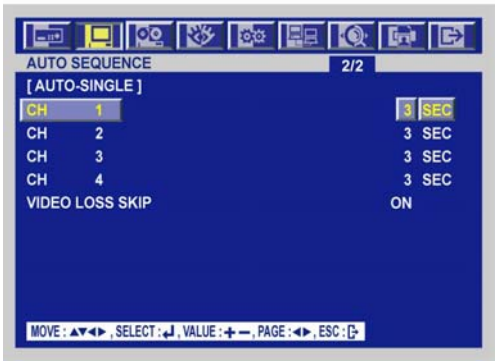
To set up the SCREEN menu,
① Move the cursor to the SCREEN icon using the◀ ,▶ buttons in the MENU screen.
② Press the ENTER button when the cursor is on the SCREEN icon and the following items appear.

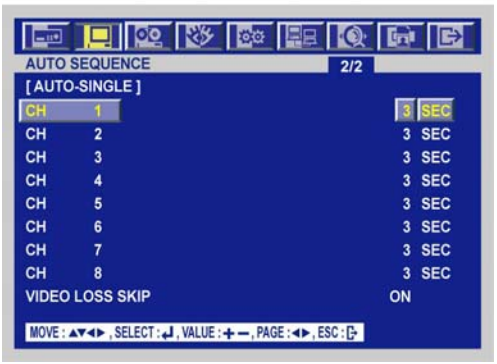
6.2.1 AUTO SEQUENCE

At the SCREEN menu,
① Move the cursor to the AUTO SEQUENCE using ▲ ,▼ buttons.
② Press the ENTER button when the cursor is on the AUTO SEQUENCE and the following screens appear. (It's different from models)



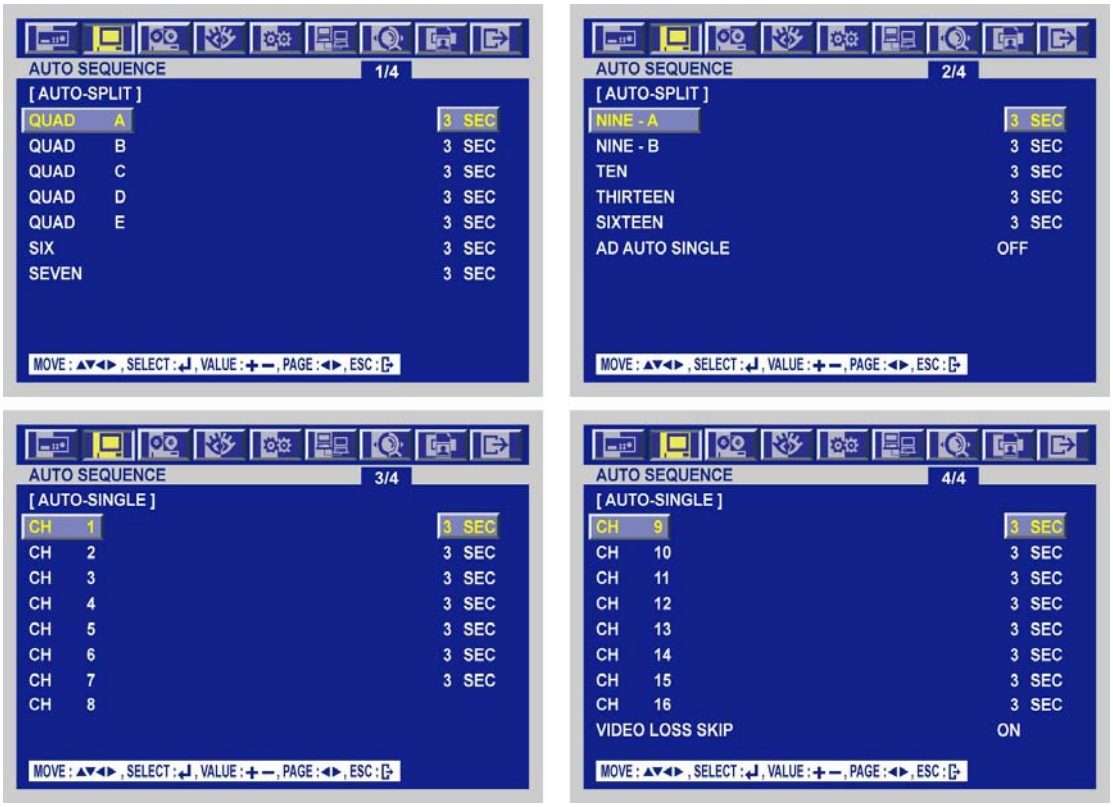






[4CH DVR]

[8CH DVR]



[16CH DVR]

③ Move the cursor to each single or split channel using the ▲ , ▼ buttons.

④ When the desired channel is selected, change the value of AUTO SEQUENCE duration using the (-), (+) buttons to set the length of time for switching each channel in sequence.
 * The value is from 1SEC to 60SEC and the default is “3SEC”.

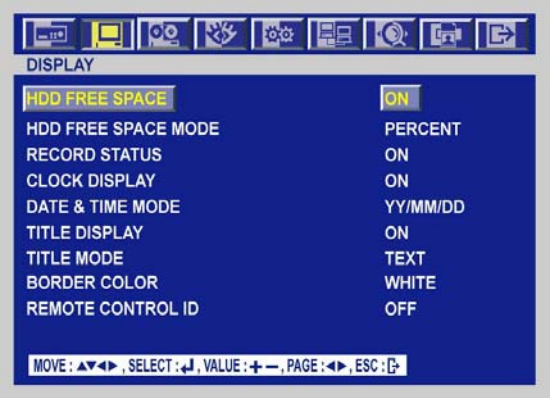
⑤ To exit this AUTO SEQUENCE menu, press the ESC button.

VIDEO LOSS SKIP : If selected ON, every VIDEO LOSS channel will be skipped in the AUTO SEQUENCE mode. The default is “ON”.

ADD AUTO SINGLE: If selected OFF, every single channel will be skipped in the AUTO SEQUENCE mode.
The default is “OFF”.

6.2.2 DISPLAY

At the SCREEN menu,
① Move the cursor to the DISPLAY using ▲ ,▼ buttons.
② Press the ENTER button when the cursor is on the DISPLAY and the following items appear.



③ To exit this DISPLAY menu, press the ESC button.

6.2.2.1 HDD FREE SPACE

At the DISPLAY menu,
① Move the cursor using the ▲, ▼ buttons to select the HDD FREE SPACE.
② Use the (-), (+) buttons to choose “ON” or “OFF”.
* The default is “ON”.

ON: Remaining capacity of the fixed(not backup) HDDs will be displayed on the screen.

6.2.2.2 HDD FREE SPACE MODE

At the DISPLAY menu,
① Move the cursor using the ▲ ,▼ buttons to select the HDD FREE SPACE MODE.
② Use the (-), (+) buttons to choose “PERCENT” or “GIGABYTE”.
* The default is “PERCENT”.

PERCENT: Remaining capacity of the fixed HDDs will be displayed on the screen in percent.
GIGABYTE: Remaining capacity of the fixed HDDs will be displayed on the screen in gigabyte.

6.2.2.3 RECORD STATUS

At the DISPLAY menu,
① Move the cursor using the ▲ ,▼ buttons to select the RECORD STATUS.
② Use the (-), (+) buttons to choose “ON” or “OFF”.
* The default is “ON”.

ON: Displaying the recording status of each channel on the screen.

6.2.2.4 CLOCK DISPLAY

At the DISPLAY menu,
① Move the cursor using the ▲ ,▼ buttons to select the CLOCK DISPLAY.
② Use the (-), (+) buttons to choose “ON” or “OFF”.
* The default is “ON”.

ON: The date and time will be displayed on the screen.

6.2.2.5 DATE&TIME MODE

At the DISPLAY menu,

① Move the cursor using the ▲, ▼ buttons to select the DATE&TIME MODE.

② Use the (-), (+) buttons to choose “MM/DD/YY”, “DD/MM/YY” or “YY/MM/DD”.

* The default is “YY/MM/DD”.

YY/MM/DD : All date and time will be displayed in numbers.
Ex. 2005/01/01 00:00:00
MM/DD/YY : the month section will be displayed in character.
Ex. JAN. 01 2005 00:00:00
DD/MM/YY : the day section will be displayed in character.
Ex. 01. JAN 2005 00:00:00

6.2.2.6 TITLE DISPLAY

At the DISPLAY menu,

① Move the cursor using the ▲, ▼ buttons to select the TITLE DISPLAY.

② Use the (-), (+) buttons to choose “ON” or “OFF”.

* The default is “ ON”.

ON: Each channel title will be displayed on the screen. (Please refer to 6.2.3 TITLE setup)

6.2.2.7 TITLE MODE

At the DISPLAY menu,

① Move the cursor using the ▲, ▼ buttons to select the TITLE MODE.

② Use the (-), (+) buttons to choose “TEXT” or “BITMAP”.

* The default is “ TEXT”.

A bitmap is a type of graphics file on a computer. You can make characters with bitmap on the setup window of network client viewer after connecting the computer with DVR. Please refer to 11.8.4.

6.2.2.8 BORDER COLOR

At the DISPLAY menu,

① Move the cursor using the ▲, ▼ buttons to select the BORDER COLOR.

② Use the (-), (+) buttons to choose “WHITE” or “BLACK”.

***** The default is “WHITE”.

WHITE: The color of the border line will be displayed on the multi-channel screen in white.
BLACK: The color of the border line will be displayed on the multi-channel screen in black.

6.2.2.9 REMOTE CONTROL ID

At the DISPLAY menu,

① Move the cursor using the ▲, ▼ buttons to select the REMOTE CONTROL ID.

② Use the (-), (+) buttons to choose “ON” or “OFF”.

***** The default is “OFF”.

ON: The remote controller ID will be displayed on the screen.

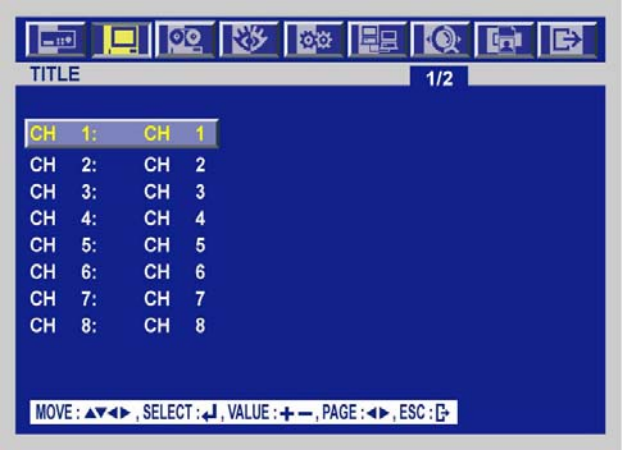
6.2.3 TITLE

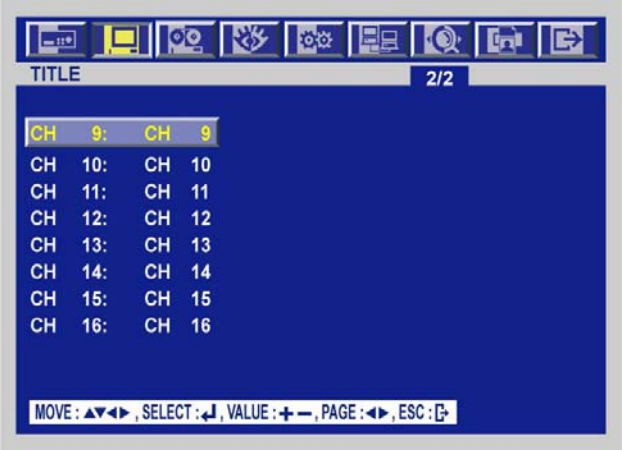
At the SCREEN menu,

① Move the cursor to the TITLE using ▲ ,▼ buttons.

② Press the ENTER button when the cursor is on the TITLE and the following 2 pages screen appears.

③ Use the ◀ , ▶ buttons to see the next page.





④ Press the ENTER button after selecting desired channel using the ▲ ,▼ buttons and the following screen appears.

⑤ Select the character using the ▲ ,▼ ,◀ ,▶ buttons and then press the ENTER button.

⑥ To exit this CHARACTER TABLE screen, press the ESC button.

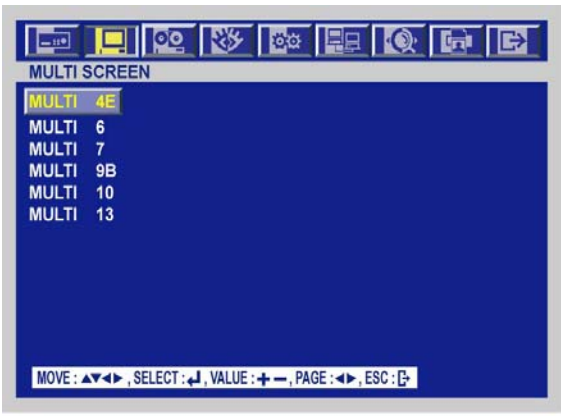
CHANNEL TITLE MODE: There are “TEXT” and “BITMAP”.
TEXT: Using the CHARACTER TABLE
BITMAP: It is possible to download new characters using the client software if you want.

6.2.4 MULTI SCREEN

You can select the desired channels and make a 4 split screen and a 9 split screen using this menu.
At the SCREEN menu,

① Move the cursor to the MULTI SCREEN using ▲, ▼ buttons.

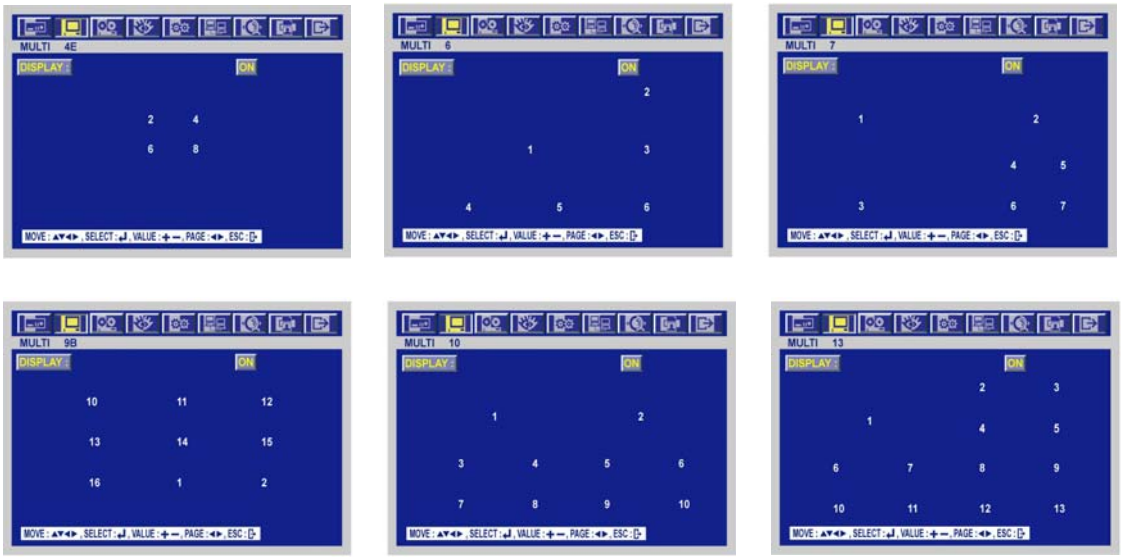
② Press the ENTER button when the cursor is on the MULTI SCREEN and the following screen appears.



③ To exit this MULTI SCREEN menu, press the ESC button.

6.2.4.1 MULTI 4E / MULTI 6 / MULTI 7 / MULTI 9B / MULTI 10 / MULTI 13

① Press the ENTER button after selecting the desired item using the ▲ , ▼ buttons.



② Set the desired number of camera in each channel screen using the (-), (+) buttons.

③ Use the ▲ , ▼ , ◀ , ▶ buttons to set the other channel screen.

④ To exit this screen, press the ESC button.

The same camera numbers should not be selected on a multi-screen.

6.2.5 COVERT

At the SCREEN menu,

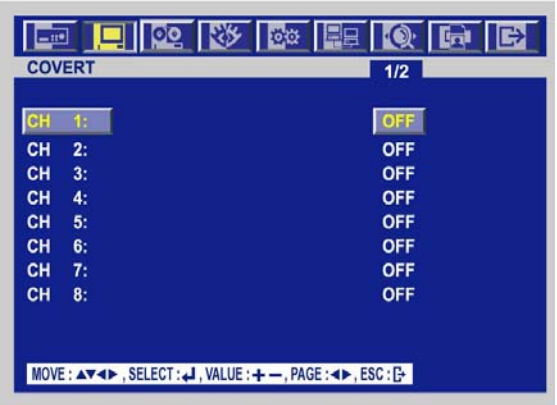
① Move the cursor to the COVERT using the ▲ ,▼ buttons.

② Press the ENTER button when the cursor is on the COVERT and the following 2 pages screen appears.

③ Move the cursor and select the desired item using the ▲ ,▼ buttons.

④ Use the (-), (+) buttons to choose “ON” or “OFF”.

⑤ Use the◀ , ▶ buttons to see the next page.



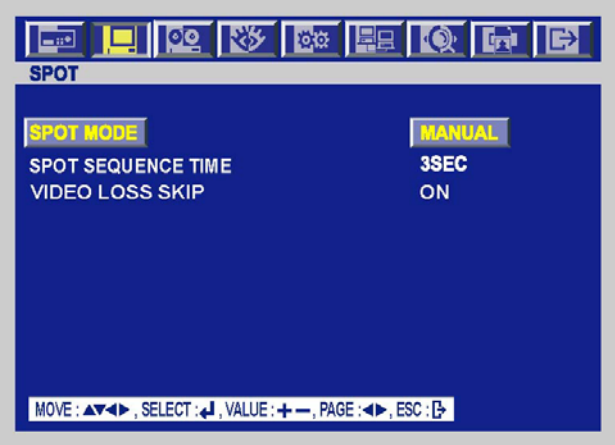
ON: Selected channel will be displayed in black screen (Hidden camera).
SELECT: It is possible to select among “LIVE&PLAYBACK&NETWORK”, “PLAYBACK&NETWORK”, “LIVE&NETWORK”, “LIVE&PLAYBACK”, “NETWORK”, “PLAYBACK” and “LIVE”.

- LIVE: To covert selected channels on live screen
- PLAY: To covert selected channels on playback screen
- NETWORK: To covert selected channels on network viewer screen

COVERT TITLE DISPLAY : If you set “ON” on this item, the “COVERT” word will be displayed on the covert channels.
The default is “OFF”.

6.2.6 SPOT

At the SCREEN menu,
① Move the cursor to the SPOT using ▲ , ▼ buttons.
② Press the ENTER button when the cursor is on the SPOT and the following screen appears.



③ To exit this SPOT menu, press the ESC button.

6.2.6.1 SPOT MODE

Use the (-), (+) buttons to select the SPOT MODE.
- MANUAL: Manually select the channel of spot monitor.
- EVENT: Event channel will be displayed automatically on spot monitor.
- SEQUENCE: Every single channel will be switching and displaying in sequence.

6.2.6.2 SPOT SEQUENCE TIME

Use the (-), (+) buttons to set the SPOT SEQUENCE TIME.
The duration of spot sequence can be set from 1SEC to 60SEC.

6.2.6.3 VIDEO LOSS SKIP

Select “ON” or “OFF” using the (-), (+) buttons
If you select “ON”, loss images will be skipped.

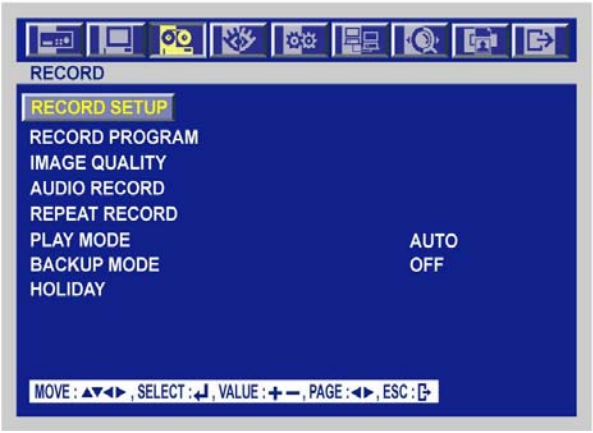
6.2.7 CAMERA

At the SCREEN menu,
① Move the cursor to the CAMERA using ▲, ▼ buttons.
② Press the ENTER button when the cursor is on the CAMERA and the following screen appears.

	You can control brightness, contrast, hue and saturation of each camera. The default is 50%.

6.3 RECORD

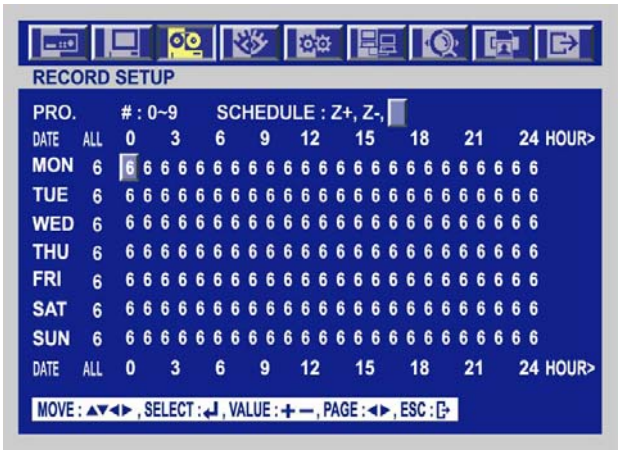
To set up the RECORD menu,
① Move the cursor to the RECORD icon using the ◀ , ▶ in the MENU screen.
② Press the ENTER button when the cursor is on the RECORD icon and the following items appear.



6.3.1 RECORD SETUP

This menu allows you to configure a weekly recording schedule. In the schedule you must use the predefined programs (0-9) in order to set up the recording properly. You can use and combine different predefined programs during the week according with your own needs. (See RECORD PROGRAM section for more information)

At the RECORD menu,
① Move the cursor to the RECORD SETUP using ▲ , ▼ buttons.
② Press the ENTER button when the cursor is on the RECORD SETUP and the following screen appears.



③ Move the cursor to choose the desired time using the ▲ , ▼ , ◀ , ▶ buttons.
④ Select the desired program among PROGRAM 0~9.
⑤ Or move the cursor to the desired position and then click the black square next to “SCHEDULE” using the Mouse.
⑥ Press the ESC button to exit this RECORD SETUP menu or press the ENTER button to enter the RECORD PROGRAM menu.

6.3.2 RECORD PROGRAM

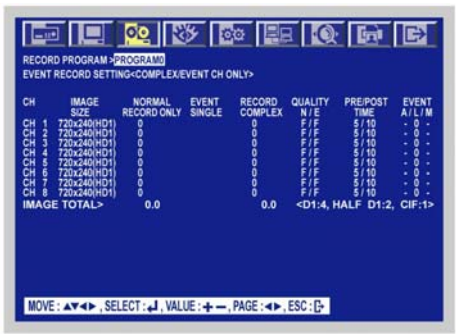
This feature uses predefined recording modes to create new ones according with your own needs. This means you can create different programs using existing predefined programs. You can have up to 10 different programs (0~9) available. These programs will be used to set up the recording schedule on the RECORD SETUP menu. For example, you can create a program for motion detection or another for continuous recording.

At the RECORD menu,

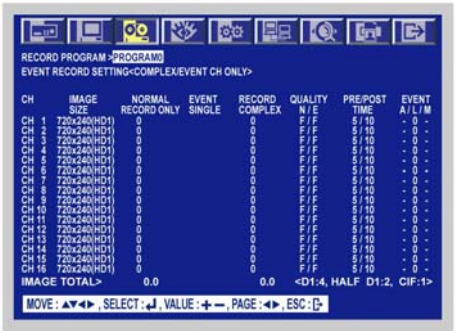
① Move the cursor to the RECORD PROGRAM using ▲ , ▼ buttons.

② Press the ENTER button when the cursor is on the RECORD PROGRAM and the following screen appears.

[4CH DVR]



[8CH DVR]



[16CH DVR]

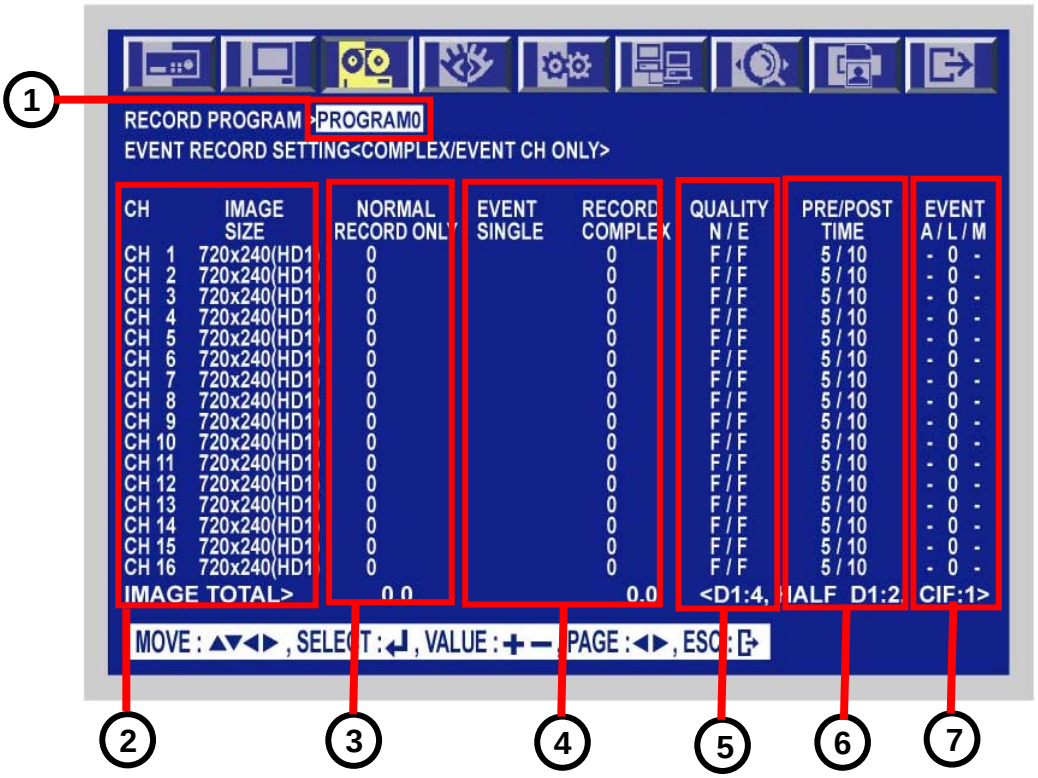
③ Use the ▲ , ▼ , ◀ , ▶ buttons to move the cursor to the desired item.

④ Select the desired RECORD TYPE using the (-), (+) buttons.

⑤ After all setting are done, exit using the 'ESC' key or the right-double-click of mouse.
When exiting from this menu, the DVR compute the values under this menu. And then if some mistakes exist out of settings it will show the proper error message and return to this menu again. And if '0' IPS value is detected out of setting it will show the warning message for some seconds and exit.

RESOLUTION	4CH IPS/TL	IPS per ch (Max)	8CH IPS/TL	IPS per ch(Max)	16CH IPS/TL	IPS per ch(Max)
360 x 240	CIF 120	30	CIF 120	15	CIF 120	7.5
720 x 240	D1/2 60	15	D1/2 60	7.5	D1/2 60	3.75
720 x 480	D1 30	7.5	D1 30	3.75	D1 30	1.875

<WHAT DOES THE EACH ITEM MEANS?>



1. REC PROGRAM
Shows the current PROGRAM #. Example PROGRAM0. Select the program according with your needs .Predefine programs are from 0 – 9.
User can choose the program number to be modified here.

2. IMAGE SIZE: Shows the actual resolution of each camera

IMAGE SIZES are : **NTSC** 360x240, 720x240, 720x480
PAL 360x288, 720x288, 720x576

3. NORMAL RECORD IPS: This setting allows you to configure the # of IPS for **continuous recording** on each camera. The total IPS will depend on the DVR model and resolution.
The IPS value for each channel can not be over the real-time IPS.
The 'real-time IPS' is 30 for NTSC and 25 for PAL.

4. EVENT IPS
The EVENT recording mode will record events caused by event conditions.
These event conditions can be triggered by different events like, motion detection, external alarm input and video loss detection.

There are two types of events: SINGLE and COMPLEX.

SINGLE	EVENT CH ONLY	ALL CHANNELS
	Under the **EVENT IPS** the DVR will record the channel triggered by any event using the higher IPS on a particular channel. The rest of the channels of the group will record based on the **NORMAL IPS** set value on each camera	Under the **EVENT IPS** the DVR will record the channels triggered by any event with the IPS value predefined or set by the user The rest of the channels of the group will record sharing the remaining **NORMAL IPS** among all remaining channels.

COMPLEX	EVENT CH ONLY	ALL CHANNELS
	Under the **EVENT IPS** the DVR will record the channels triggered by any event . The rest of the channels of the group will record based on the **NORMAL IPS** set value on each camera ***Note: The maximum value between the NORMAL IPS and the EVENT IPS determine the allowed maximum for a channel.*** ***The CH- SUM must not exceed the maximum IPS of the group***.	The DVR records **ALL** channels triggered by events Triggered channels use **EVENT IPS** on each channel. The rest of the channels of the group will record based on the remaining **EVENT IPS** among all remaining channels.

EVENT CH-SUM

This item show the currently allocated sum of each channel.

(a) For SINGLE/EVENT CH ONLY

- The displayed format is '**nn**/----'.
- The value 'nn' of a channel means the total recording IPS of a group when the event happens on this channel. The EVENT IPS of this channel and the sum of other channels in a group makes this value '**nn**'.
- Any one of the CH-SUMs can not exceed the maximum IPS of a group because when event happens with the normal record on the total IPS of a group will be the same value of this.
- '----' has no meanings.

(b) For SINGLE/ALL CHANNLES

- The displayed format is '**nn/AUTO'**.
- The value '**nn**' of a channel is the recording IPS of the channel with an event. and '**AUTO**' means that the auto-calculated IPS of the channel when event will happen from other channels.
- Under this mode, the 'GROUP n SUM' has meaning for only the NORMAL IPS and can not exceed the maximum IPS of a group. And the total EVENT IPS is always the maximum IPS of a group because the remains of the EVNET IPS for a channel will be allocated to other channels evenly according to the automatic calculated value. So when event(s) happen while the normal record is on, the maximum IPS of a group will be used.

(c) For COMPLEX/EVENT CH ONLY

- The displayed format is '**nn/MAX'**.
- The value '**nn**' of a channel is the greater one between the NORMAL IPS and the EVENT IPS.
- The actual event recording IPS of a channel is not the **'nn'** but the value allocated under the EVENT IPS.
- **'nn'** can't exceed the real-time IPS value.
- Because under this mode the NORMAL IPS has meaning even for the event recording mode, the representative IPS should be the greater one.
- The total sum of all CH-SUM (GROUP n SUM of CH-SUMs) in a group can not exceed the maximum IPS of a group.
- **'MAX'** means the greater value of a channel between the NORMAL IPS and the EVENT IPS. This is only the indication for user's understanding.

(d) For COMPLEX/ALL CHANNELS

- The displayed format is '---/----'.
- '---/----', CH-SUM value, has not meaning under this mode at all.
- In this case, only the 'GROUP n SUM's of the NORMAL IPS and the EVENT IPS have the meaningful sum.

5. QUALITY N/E

the recording video quality for a channel.
the value under 'N' row is for the quality for the normal recording.
the value under 'E' row is for the quality for the event recording.
three step of quality exist. N means the 'Normal Quality', H means the 'High Quality' and B means the 'Best Quality'.

6. PRE/POST TIME

The unit of the value on this row is the second.
PRE TIME is the pre-recording duration that means how long the channel is recorded before the event happen until the moment event issues.
POST TIME is the duration that the event channel will be recorded after the moment event issue.
PRE TIME can have the value between 0 and 5 seconds.
POST TIME can have the value between 0 and 60 seconds.

7. EVENT A/L/M

These items are the conditions under which the event recording starts
The value '0' means if the '0' checked event condition happen the DVR should start the event recording for this channel and switch to the event recording mode.
The value '-' means to discard this unchecked condition as an event.

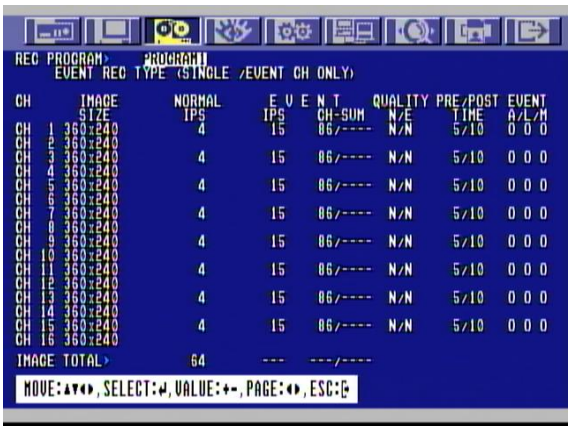
10 PREDEFINED PROGRAMS ARE INCLUDED BY DEFAULT. PROGRAMS ARE AVAILABLE FROM 0 - 9.

PROGRAM 0.

FEATURES.

RECORDING MODES:
NORMAL (Continuous) : 0 ips
EVENT ***COMPLEX/EVENT CH ONLY*** 0 ips
RESOLUTION . 720 X 240
QUALITY: F/F
PRE/POST 5/10
EVENT LOG :0 / 0 / 0. (ALL Events= ON)

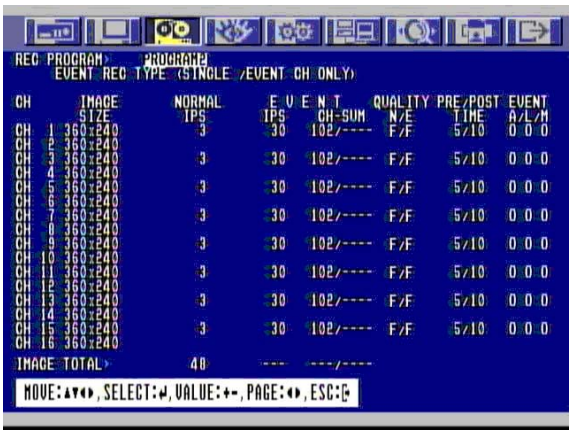
PROGRAM 1



FEATURES

RECORDING MODES:
NORMAL (Continuous) : 4 fps
EVENT ***SINGLE / EVENT CH ONLY*** 15 fps
RESOLUTION . 360 X 240 CIF
QUALITY: L/L
PRE/POST 5/10
EVENT LOG : 0 / 0 / 0. (ALL Events= ON)

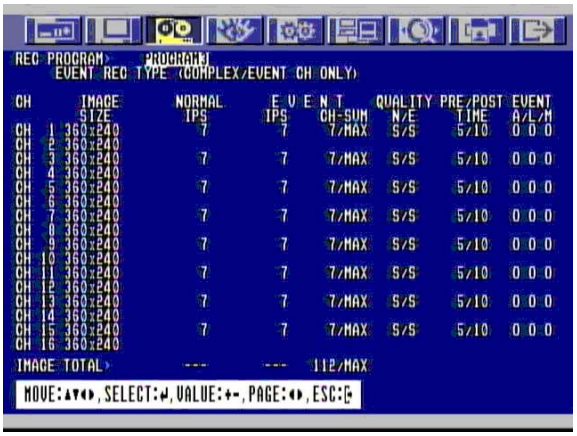
PROGRAM 2.



FEATURES.

RECORDING MODES:
NORMAL (Continuous) : 3 ips
EVENT ***SINGLE /EVENT CH ONLY*** 30 ips
RESOLUTION . 360 X 240
QUALITY: F/F
PRE/POST 5/10
EVENT LOG :0 / 0 / 0. (ALL Events= ON)

PROGRAM 3



FEATURES.

RECORDING MODES:
NORMAL (Continuous) : 7 ips
EVENT ***COMPLEX/EVENT CH ONLY*** 7 ips
RESOLUTION . 360 X 240
QUALITY: S/S
PRE/POST 5/10
EVENT LOG :0 / 0 / 0. (ALL Events= ON)

PROGRAM 4.

FEATURES.

RECORDING MODES:
NORMAL (Continuous) : 2 ips
EVENT ***SINGLE /EVENT CH ONLY*** 15 ips
RESOLUTION . 720 X 240
QUALITY: L/L
PRE/POST 5/10
EVENT LOG :0 / 0 / 0. (ALL Events= ON)

PROGRAM 5

FEATURES.

RECORDING MODES:
NORMAL (Continuous) : 1 ips
EVENT ***SINGLE /EVENT CH ONLY*** 30 ips
RESOLUTION . 720 X 240
QUALITY: F/F
PRE/POST 5/10
EVENT LOG :0 / 0 / 0. (ALL Events= ON)

PROGRAM 6.

FEATURES.

RECORDING MODES:
NORMAL (Continuous) : 3 ips
EVENT ***COMPLEX /EVENT CH ONLY*** 3 ips
RESOLUTION . 720 X 240
QUALITY: S/S
PRE/POST 5/10
EVENT LOG :0 / 0 / 0. (ALL Events= ON)

PROGRAM 7

FEATURES.

RECORDING MODES:
NORMAL (Continuous) : 1 ips
EVENT ***SINGLE /EVENT CH ONLY*** 5 ips
RESOLUTION . 720 X 480
QUALITY: L/L
PRE/POST 5/10
EVENT LOG :0 / 0 / 0. (ALL Events= ON)

PROGRAM 8.

PROGRAM 9

FEATURES.

RECORDING MODES:
NORMAL (Continuous) : 1 ips
EVENT ***SINGLE /EVENT CH ONLY*** 10 ips
RESOLUTION . 720 X 480
QUALITY: F/F
PRE/POST 5/10
EVENT LOG :0 / 0 / 0. (ALL Events= ON)

FEATURES.

RECORDING MODES:
NORMAL (Continuous) : 1 ips
EVENT ***COMPLEX /EVENT CH ONLY*** 1 ips
RESOLUTION . 720 X 480
QUALITY: S/S
PRE/POST 5/10
EVENT LOG :0 / 0 / 0. (ALL Events= ON)

< Pre-defined PROGRAM table by default>
- These are 10 kinds of program and you can change the program setting.
- The program 0 is used for the QUICK SETUP as well when QUCIK SETUP is ON.

6.3.3 IMAGE QUALITY

PROGRAM	0	1	2	3	4	5	6	7	8	9
RECORD RECORD SETTING	COMPLEX EVENT CH ONLY	SINGLE EVENT CH ONLY	SINGLE EVENT CH ONLY	COMPLEX EVENT CH ONLY	SINGLE EVENT CH ONLY	SINGLE EVENT CH ONLY	COMPLEX EVENT CH ONLY	SINGLE EVENT CH ONLY	SINGLE EVENT CH ONLY	COMPLEX EVENT CH ONLY
IMAGE SIZE	720x240	360x240	360x240	360x240	720x240	720x240	720x240	720x480	720x480	720x480
NORMAL	0	4	3	7	2	1	3	1	1	1
EVENT SINGLE	0	15	30	0	15	30	0	5	10	0
EVENT COMPLEX	0	0	0	7	0	0	3	0	0	1
CH-SUM	0/MAX	86/-	102/-	7/MAX	45/-	45/-	3/MAX	20/-	25/-	1/MAX
QUALITY NORMAL	F	L	F	S	L	F	S	L	F	S
QUALITY EVENT	F	L	F	S	L	F	S	L	F	S
PRE-ALARM RECORDING	5	5	5	5	5	5	5	5	5	5
POST-ALARM RECORDING	10	10	10	10	10	10	10	10	10	10
EVENT ON/OFF	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON	ALL ON

At the RECORD menu,

① Move the cursor to the IMAGE QUALITY using ▲ ,▼ buttons.

② Press the ENTER button when the cursor is on the IMAGE QUALITY and the following screen appears.

③ Select the desired RECORD QUALITY using the (-), (+) buttons.

④ And you can see the size of each image quality and how long you can record in the installed HDDs by the image quality.

⑤ To exit this IMAGE QUALITY menu, press the ESC button.

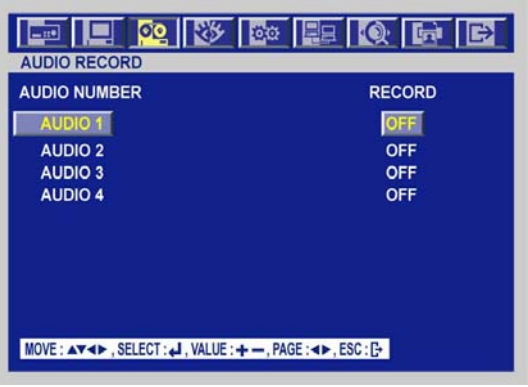
NOTE
You have to turn off the "REC" button to use the image quality menu.
RECORD TIME: A period how long you can record in free space of installed HDD(s) by setting frame rate.
TOTAL TIME: A period how long you can record in total installed HDD(s) by setting frame rate.
** The better the image quality is, the bigger the file size is and the worse the image quality, the smaller the file size is.

6.3.4 AUDIO RECORD

At the RECORD menu,

① Move the cursor to the AUDIO RECORD using the ▲ , ▼ buttons.

② Press the ENTER button when the cursor is on the AUDIO RECORD and the following screen appears.



③ Select the audio recording channels using the (-), (+) buttons.

④ Press the AUDIO SEL button and then press the desired channel button on the front panel after saving this menu and you can hear the selected channel audio.

NOTE : AUDIO SELECT + CHANNEL during live or playback

6.3.5 REPEAT RECORD

At the RECORD menu,
① Move the cursor to the REPEAT RECORD using ▲, ▼ buttons.
② Press the ENTER button when the cursor is on the REPEAT RECORD and the following screen appears.

③ Use the (-), (+) buttons to set “ON” or “OFF”.
④ It is possible to set a point of time to work the REPEAT RECORD ALARM.
Move the cursor to ” REPEAT RECORD ALARM” using ▲, ▼ buttons and then select the desired value using (-), (+) buttons.
The value is from 5% to 10% and OFF is not.
⑤ To exit this REPEAT RECORD menu, press the ESC button.

ON: The recorded data will be overwritten when it is a point of time to work the “REPEAT RECORD”.
“REPEAT RECORD ALARM” is the rest capacity of the HDD.

If you set “REPEAT RECORD” to OFF and “REPEAT RECORD ALARM” to 5%, alarm will work when the rest capacity of the HDD is 5%.

6.3.6 PLAY MODE

At the RECORD menu,
① Move the cursor to the PLAY MODE using ▲, ▼ buttons.
② Select the PLAY MODE using the (-), (+) buttons.

FRAME : It will playback images in frame mode which is useful for recorded images in high frame rate. This may occur moving artifact with recorded images in low frame rate.
FIELD : It will playback images in field mode. This reduces the resolution, but is suitable for recorded images in low frame rate.

6.3.7 BACKUP MODE

At the RECORD menu,
① Move the cursor to the “BACKUP MODE” using ▲, ▼ buttons.
② Select the “BACKUP MODE” using the (-), (+) buttons.

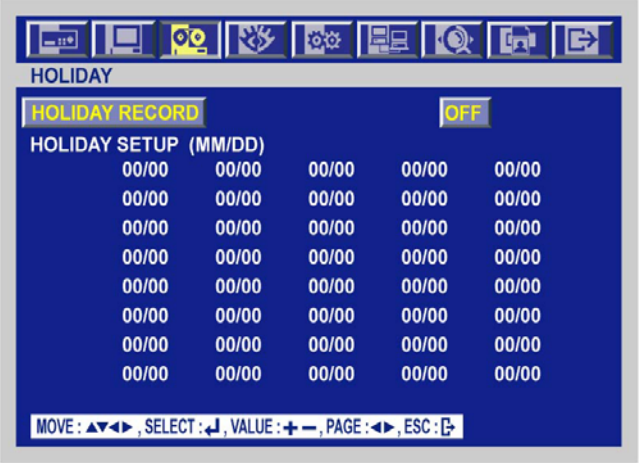
EVENT : Backup only when the event occurs.
MIRROR : Recording the same images in backup HDD.
OFF : Not backup.

6.3.8 HOLIDAY

At the RECORD menu,

① Move the cursor to the “HOLIDAY” using ▲, ▼ buttons.

② Press the “ENTER” button to set up “HOLIDAY” and the HOLIDAY menu screen appears.



③ Set up “ON” or “OFF” of HOLIDAY RECORD using the (-), (+) buttons.

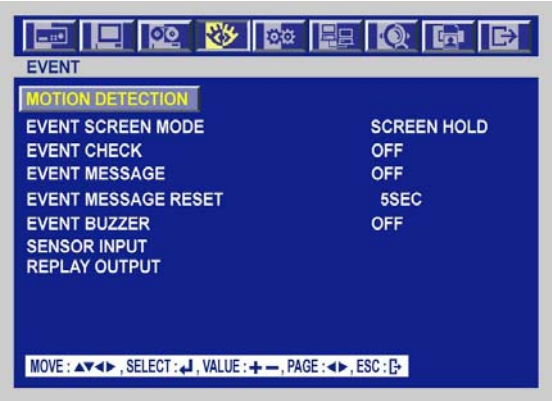
④ Move the cursor using ▲ , ▼ buttons and set up the value using the (-), (+) buttons.

⑤ To exit this HOLIDAY menu, press the ESC button.

NOTE: DVR will record like SUNDAY recording program on setting HOLIDAY.

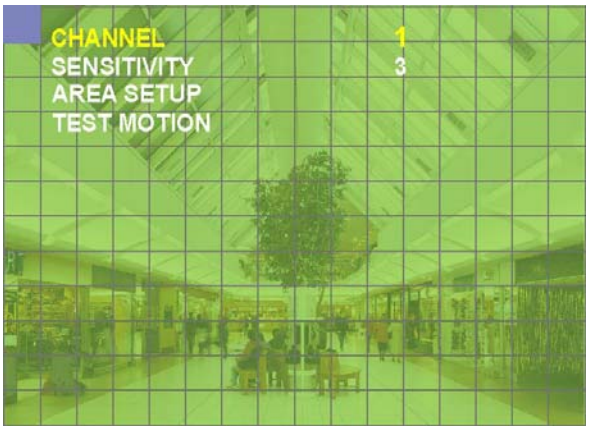
6.4 EVENT

To set up the EVENT menu,
① Move the cursor to the EVENT icon using the◀ ,▶ in the MENU screen.
② Press the ENTER button when the cursor is on the EVENT icon and the following items appear.



6.4.1 MOTION DETECTION

At the EVENT menu,
① Move the cursor to the MOTION DETECTION using ▲ , ▼ buttons.
② Press the ENTER button when the cursor is on the MOTION DETECTION and the following screen appears.



6.4.1.1 CHANNEL
At the MOTION DETECTION menu,
① Move the cursor to CHANNEL using ▲ , ▼ buttons.
② Select the desired channel using the (-), (+) buttons.

6.4.1.2 SENSITIVITY
At the MOTION DETECTION menu,
① Move the cursor to SENSITIVITY using ▲ , ▼ buttons.
② Select the sensitivity level using the (-), (+) buttons.

SENSITIVITY: The higher the number is, the more sensitive. 1(lowest) ~ 5(highest)

6.4.1.3 AREA SETUP

At the MOTION DETECTION menu,

① Move the cursor to AREA SETUP using ▲, ▼ buttons.

② Press the ENTER button to set the motion detection area.

③ Select the motion detection area using the ▲, ▼, ◀, ▶ buttons and then press the ENTER button to save the area.

④ To exit this AREA SETUP, press the ESC button.

Mouse operation: Click the right button of mouse and drag to select the desired cells.
AREA SETUP GRID: 16 x 12
NOTE: If you press the PLAY button, all cells will be green and can't detect the motion.
If you press the FAST button, all cells will be transparent and can detect the motion.

6.4.1.4 TEST MOTION

At the MOTION DETECTION menu,

① Move the cursor to TEST MOTION using the ▲, ▼ buttons.

② Press the ENTER button to test the motion detection.

③ To exit this TEST MOTION, press the ESC button.

6.4.2 EVENT SCREEN MODE

At the EVENT menu,

① Move the cursor to the EVENT SCREEN MODE using ▲, ▼ buttons.

② Select the EVENT SCREEN MODE using the (-), (+) buttons.

SCREEN HOLD : Keeping the current screen even if the event occurs.
EVENT FULL : Display the full screen of the channel which the event occurs.
EVENT MULTI : Display the multi-screen when the event occurs.
EVENT F_RTN : Display the full screen of the channel which the event occurs and return.
EVENT M_RTN : Display the multi-screen when the event occurs and return.

NOTE: If you want to use this function, you have to set EVENT setting of each channel of RECORD PROGRAM by "O(ON)".

6.4.3 EVENT CHECK

At the EVENT menu,

① Move the cursor to the EVENT CHECK using ▲, ▼ buttons.

② Select "ON" or "OFF" using the (-), (+) buttons.

6.4.4 EVENT MESSAGE

At the EVENT menu,

① Move the cursor to the EVENT MESSAGE using ▲, ▼ buttons.

② Select "ON" or "OFF" using the (-), (+) buttons.

ON: The warning message will be displayed when the event occurs.

6.4.5 EVENT MESSAGE RESET

At the EVENT menu,

① Move the cursor to the EVENT MESSAGE RESET using ▲, ▼ buttons.

② Set the time to reset the event message using the (-), (+) buttons.

6.4.6 EVENT BUZZER

At the EVENT menu,

① Move the cursor to the EVENT BUZZER using ▲ ,▼ buttons.

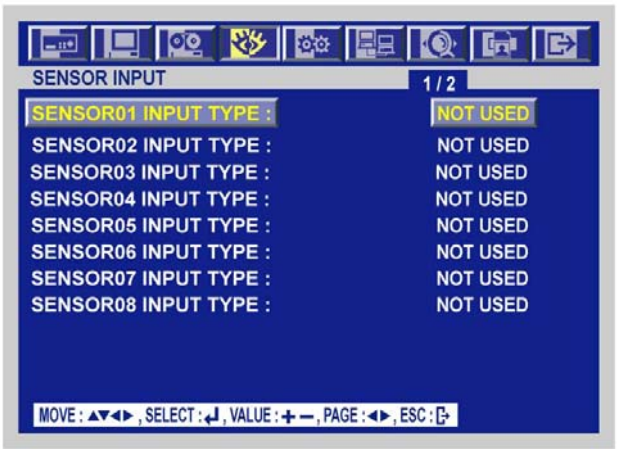
② Select “ON’ or “OFF” using the (-), (+) buttons to set the event buzzer.

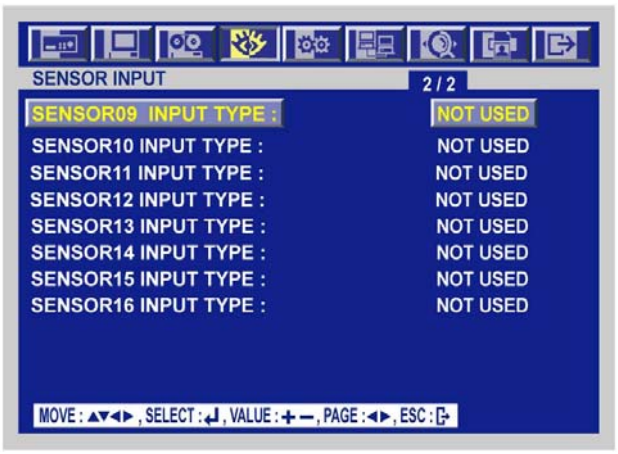
6.4.7 SENSOR INPUT

At the EVENT menu,

① Move the cursor to the SENSOR INPUT using the ▲ ,▼ buttons.

② Press the ENTER button when the cursor is on the SENSOR INPUT and the following 2 pages screen appears.





③ Select the desired channel using the ▲ , ▼ buttons.

④ Select the type of sensor which is connected with DVR using the (-), (+) buttons.

⑤ To exit this SENSOR INPUT menu, press the ESC button.

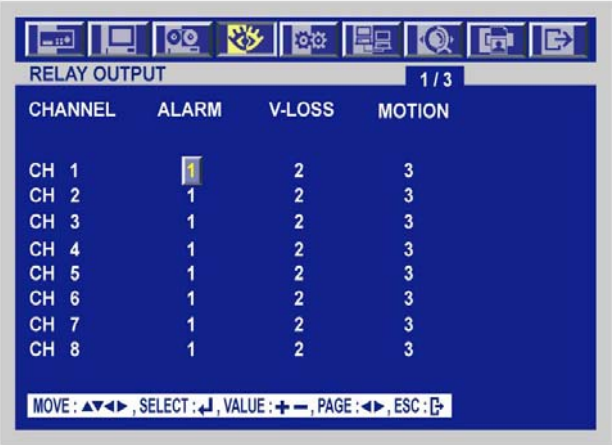
Select the right sensor type according to the type of installed sensor with the unit.
NORMAL OPEN : The sensor is open in normal times.
NORMAL CLOSE : The sensor is close in normal times.
NOT INSTALLED: No sensors are connected to the DVR unit

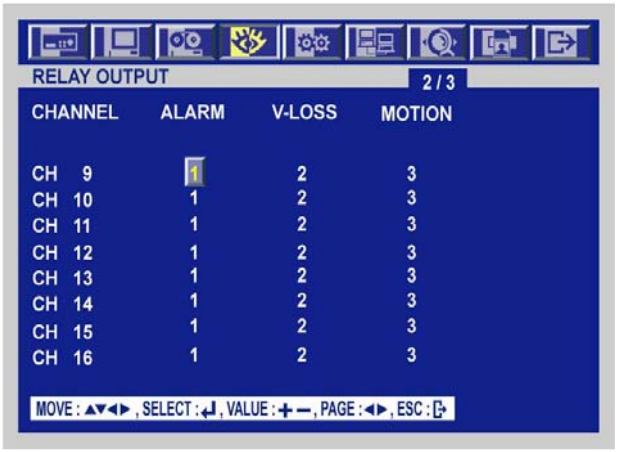
6.4.8 RELAY OUTPUT

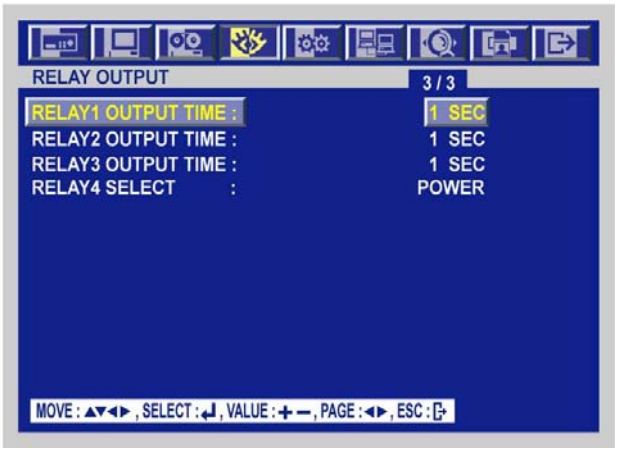
At the EVENT menu,

① Move the cursor to the “RELAY OUTPUT” using the ▲, ▼ buttons.

② Press the ENTER button when the cursor is on the “RELAY OUTPUT” and the following screen appears.







③ Move the cursor using the ▲, ▼, ◀, ▶ buttons and set up the value using the (-), (+) buttons.

④ Press the ◀ button to see the next page.

⑤ To exit this screen, press the “ESC” button.

NOTE

- It is possible to set the RELAY OUTPUT of each channel in the type of event.
- Relay output is from 1 to 4 and it is possible to set the period of the relay output.

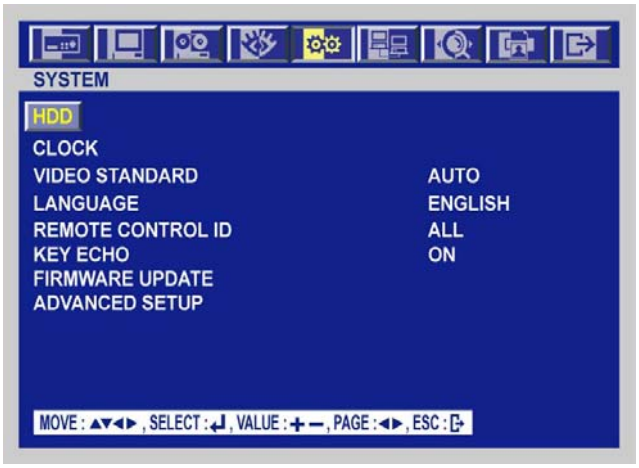
<RELAY 4 SELECT>

There are POWER, USER, NOT USED and HDD ERROR.

- POWER: The relay is working when power is off.
- USER: User can operate the relay manually.
  Press the “FUNCTION” button to operate RELAY 4 manually.
  NC→NO: And then press the (+) button.
  NO→NC: And then press the (-) button.
  Press the “FUNCTION” button again if you want to exit this mode.
  (You can also use this function through network viewer.)

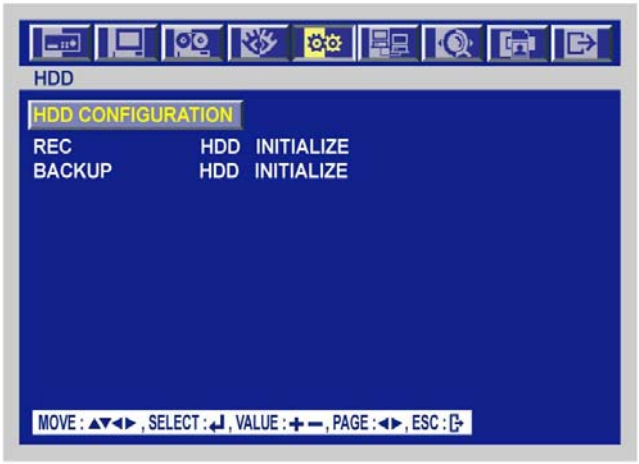
6.5 SYSTEM

To set up the SYSTEM menu,
① Move the cursor to the SYSTEM icon using the◀ ,▶ in the MENU screen.
② Press the ENTER button when the cursor is on the SYSTEM icon and the following items appear.



6.5.1 HDD

At the SYSTEM menu,
① Move the cursor to the HDD using the ▲ , ▼ buttons.
② Press the ENTER button when the cursor is on the HDD and the following screen appears.



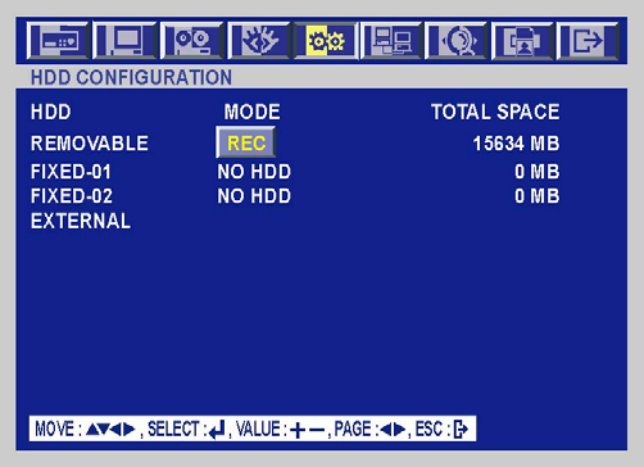
③ To exit this HDD menu, press the ESC button.

6.5.1.1 HDD CONFIGURATION

At the HDD menu,

① Move the cursor to HDD CONFIGURATION using the ▲ ,▼ buttons.

② Press the ENTER button when the cursor is on the HDD CONFIGURATION and the following screen appears.



③ Use the ▲ , ▼ , ◀ , ▶ buttons to move the cursor and use the (-), (+) buttons to change the value.

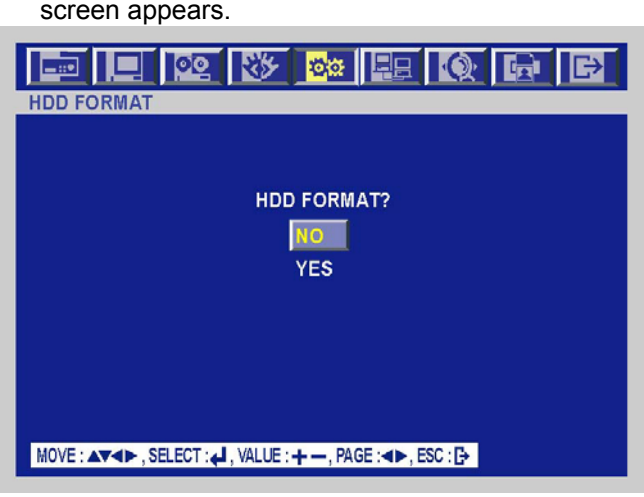
HDD MODE
- REC: Normal and Event recording
- BACKUP: Only for backup

6.5.1.2 REC HDD INITIALIZE

At the HDD menu,

① Move the cursor to REC HDD INITIALIZE using the ▲ ,▼ buttons.

② Press the ENTER button when the cursor is on the REC HDD INITIALIZE and the following screen appears.



③ If you want to initialize, move the cursor to “YES” and then press the “ENTER” button. If not, move the cursor to “NO” and then press the “ENTER” button.

④ To exit this screen, press the ESC button.

⑤ To exit this HDD menu, press the “ESC” button again.

6.5.1.3 BACKUP HDD INITIALIZE

At the HDD menu,

① Move the cursor to “BACKUP HDD INITIALIZE” using the ▲, ▼ buttons.

② Press the “ENTER” button when the cursor is on the “BACKUP HDD INITIALIZE” and the following screen appears.

③ If you want to initialize, move the cursor to “YES” and then press the ENTER button. If not, move the cursor to “NO” and then press the ENTER button.

④ To exit this screen, press the ESC button.

⑤ To exit this HDD menu, press the “ESC” button again.

6.5.2 CLOCK

At the SYSTEM menu,

① Move the cursor to the CLOCK using the ▲, ▼ buttons.

② Press the ENTER button when the cursor is on the CLOCK and the following screen appears.

6.5.2.1 DATE&TIME

At the CLOCK menu,

① Move the cursor to the DATE&TIME using the ▲, ▼ buttons.

② Press the ENTER button when the cursor is on the DATE&TIME and the following screen appears.

③ Use the ▲, ▼, ◀, ▶ buttons to move the cursor to the desired position of date or time.

④ Use the (-), (+) buttons to modify the current date and time.

- DATE: YYYY/MM/DD YEAR/MONTH/DAY
- TIME : HH:MM:SS HOUR:MINUTE:SECOND

⑤ Press the ENTER button to save the modified value.

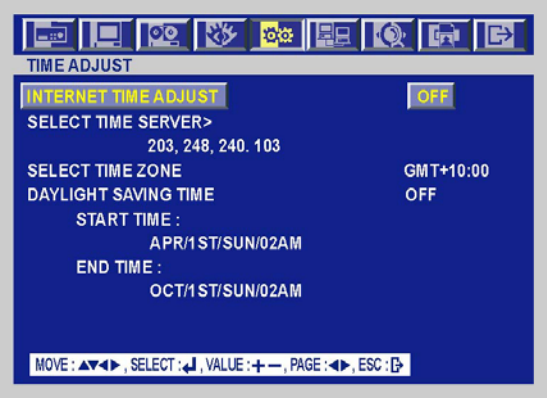
⑥ To exit this DATE & TIME screen, press the ESC button.

6.5.2.2 TIME ADJUST

At the CLOCK menu,

① Move the cursor to the TIME ADJUST using the ▲ ,▼ buttons.

② Press the ENTER button when the cursor is on the TIME ADJUST and the following screen appears.



③ Select “ON” or “OFF” using the (-), (+) buttons when the cursor is on “INTERNET TIME ADJUST”. If the INTERNET TIME ADJUST is “ON”, the time of DVR will be adjusted to the time offered by the internet server.
** There are 10 kinds of internet server to supply GMT in this DVR.

④ Move the cursor using the ▲ ,▼, ◀ , ▶ buttons and then set the IP address of SELECT TIME SERVER using the (-), (+) buttons.

⑤ Set the correct TIME ZONE standardizing GMT(Greenwich Mean Time).

⑥ Move the cursor to the DAYLIGHT SAVING TIME(Summer time) using the ▲ , ▼ buttons and then select “ON” or “OFF” using the (-), (+) buttons.

⑦ If the DAYLIGHT SAVING TIME set “ON”, set up the starting date and time and end date and time. Use the ▲ , ▼ buttons to move the cursor and use the (-), (+) buttons to change the value.

⑧ To exit this TIME ADJUST menu, press the ESC button.

NOTE: If you want to use this function, you have to input DNS address.
Please refer to 6.6.1.
Manual setup: This DVR can recognize the correct time by itself. That is to say, if you input the correct time 3 or 4 times, the DVR will recognize the clock error and display the correct time by itself.
When you power on, you can see the TIME TRIMMING VALUE screen and modify time correctly on this screen with AUTO button and ALARM RESET button.

6.5.3 VIDEO STANDARD

At the SYSTEM menu,

① Move the cursor to the VIDEO STANDARD using the ▲ ,▼ buttons.

② Select the desired value using the (-), (+) buttons.

If you select “AUTO”, this DVR can detect NTSC/PAL automatically boot time.
The default is “AUTO”.

6.5.4 LANGUAGE

At the SYSTEM menu,
① Move the cursor to the LANGUAGE using the ▲ ,▼ buttons.
② Select the desired language using the (-), (+) buttons.
* Available languages: ENGLISH, KOREAN, JAPANESE , POLISH, SPANISH, RUSSIAN, CHINESE, TAIWANESE.

6.5.5 REMOTE CONTROL ID

At the SYSTEM menu,
① Move the cursor to the REMOTE CONTROL ID using the ▲ , ▼ buttons.
② Set the REMOTE CONTROL ID using the (-), (+) buttons.

If you are operating more than one DVR in the same place and wish to use the remote controller, the remote controller ID setup is required.

Creates the Remote controller ID
Select one of ALL, 11~14, 21~24, 31~34, 41~44, and then press the same number button on the supplied remote controller before the operation.

6.5.6 KEY ECHO

At the SYSTEM menu,
① Move the cursor to the KEY ECHO using the ▲ , ▼ buttons.
② Set “ON” or “OFF” using the (-), (+) buttons.

ON : The beep sounds when you press any buttons on the front panel.
OFF : The beep does not sound.

6.5.7 ADVANCED SETUP

At the SYSTEM menu,
① Move the cursor to the ADVANCED SETUP using the ▲ , ▼ buttons.
② Press the ENTER button when the cursor is on the ADVANCED SETUP and the following screen appears.

③ To exit this ADVANCED SETUP menu, press the ESC button

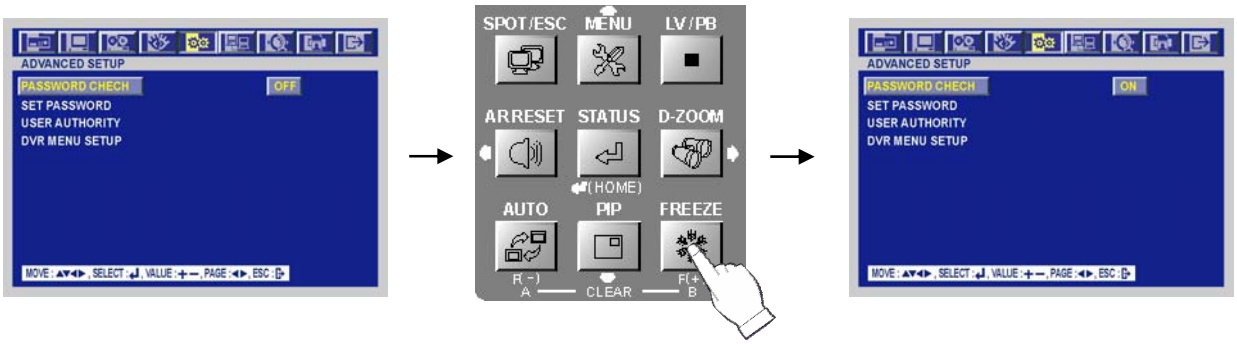
NOTE: In case that the PASSWORD CHECK is on, only ADMIN and MASTER can enter the ADVANCED SETUP MENU.

6.5.7.1 PASSWORD CHECK

At the ADVANCED SETUP menu,

① Move the cursor to the PASSWORD CHECK using the ▲, ▼ buttons.

② Select ON or OFF using the (-), (+) buttons. If you select OFF, password menu won't work.

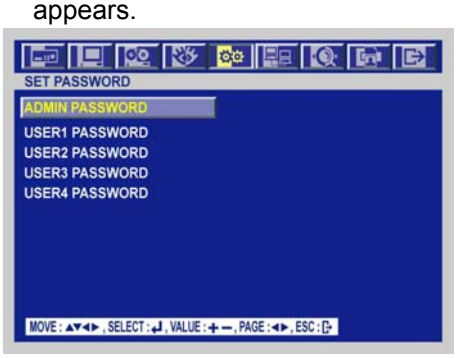


6.5.7.2 SET PASSWORD

At the ADVANCED SETUP menu,

① Move the cursor to the SET PASSWORD using the ▲, ▼ buttons.

② Press the ENTER button when the cursor is on the SET PASSWORD and the following screen appears.



③ Select the administrator or user1~4 to change the password and then press "ENTER" button and you can see the following screen.

④ Insert your desired password in the eight digits marked _ _ _ _ _ _ _ _ beside NEW PASSWORD using the CAMERA/ NUMBER INPUT buttons.

⑤ And then reinsert 8 numbers of the NEW PASSWORD in the eight digits marked _ _ _ _ _ _ _ _ beside RE-TYPE using the CAMERA/ NUMBER INPUT buttons to verify the password.

⑥ To exit this menu, press the ESC button.

NOTE: You can use only 0~9 number buttons to setup the PASSWORD.
The default of ADMIN is 11111111, USER1 is 22222222, USER2 is 33333333, USER3 is 44444444, USRE4 is 55555555.
If you forget the admin password, please contact the authorized dealer.
CAUTION: Change the password after purchasing for a security.

6.5.7.3 USER AUTHORITY

At the ADVANCED SETUP menu,

① Move the cursor to the USER AUTHORITY using the ▲ ,▼ buttons.

② Press the ENTER button when the cursor is on the USER AUTHORITY and the following screen appears.

③ Move the cursor using the ▲ , ▼, ◄ , ► buttons and change the value using the (-), (+) buttons.

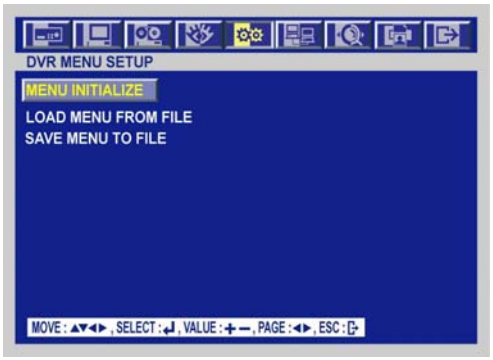
If you set any items by “ON”, the password will be required when you start to work them.
The defaults are “OFF”.

6.5.7.4 DVR MENU SETUP

At the ADVANCED SETUP menu,

① Move the cursor to the DVR MENU SETUP using the ▲ , ▼ buttons.

② Press the ENTER button when the cursor is on the DVR MENU SETUP and the following screen appears.



6.5.7.4.1 MENU INITIALIZE

At the DVR MENU SETUP menu,

① Move the cursor to the MENU INITIALIZE using the ▲, ▼ buttons.

② Press the ENTER button when the cursor is on the DVR INITIALIZE and the following screen appears.

③ If you want to initialize, move the cursor to “YES” and then press the ENTER button. If not, move the cursor to “NO” and then press the ENTER button. Use the ▲ ,▼ buttons to move the cursor.

NOTE: If you do this MENU INITIALIZE, all menu setting values will be factory default.
HDD’s data will not be deleted.

6.5.7.4.2 LOAD MENU FROM FILE

At the DVR MENU SETUP menu,

① Insert the USB memory stick to download the menu file from the USB memory stick.

② Move the cursor to the LOAD MENU FROM FILE using the ▲, ▼ buttons and then press the ENTER button.

NOTE: This function is to upload the menu file to be saved in USB memory stick in the DVR.

6.5.7.4.3 SAVE MENU TO FILE

At the DVR MENU SETUP menu,

① Insert the USB memory stick to copy the current DVR menu file to the USB memory stick.

② Move the cursor to the SAVE MENU TO FILE using the ▲, ▼ buttons and then press the ENTER button.

NOTE : It is possible to copy and upload the menu setting only with a front USB port.

6.5.8 FIRMWARE UPGRADE

At the SYSTEM menu,

① Move the cursor to the FIRMWARE UPGRADE using the ▲, ▼ buttons.

② Press the ENTER button when the cursor is on the FIRMWARE UPGRADE and the following screen appears.

③ If you want to update firmware using the USB port, move the cursor to “YES” and then press the ENTER button. If not, move the cursor to “NO” and then press the ENTER button.
Use the ▲ ,▼ buttons to move the cursor.

④ To exit this FIRMWARE UPGRADE screen, press the ESC button.

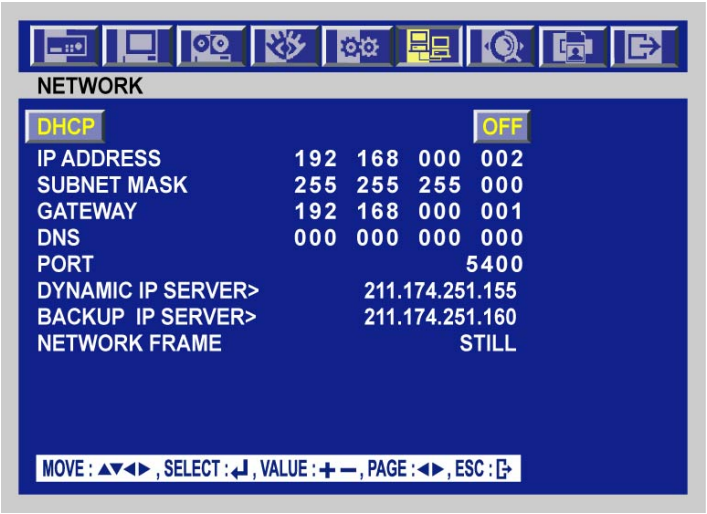
NOTE : It is possible to upgrade the firmware only with a Front USB port.

6.6 LINK

To set up the LINK menu,
① Move the cursor to the LINK icon using the ◀ , ▶ in the MENU screen.
② Press the ENTER button when the cursor is on the LINK icon and the following items appear.

6.6.1 NETWORK

At the LINK menu,
① Move the cursor to the NETWORK using the ▲ , ▼ buttons.
② Press the ENTER button when the cursor is on the NETWORK and the following screen appears.



③ To exit this NETWORK menu, press the ESC button.

<Fixed IP>

6.6.1.1 DHCP

At the NETWORK menu,
① Move the cursor to the DHCP using the▲ ,▼ buttons.
② Select “OFF” using the (-), (+) buttons.

6.6.1.2 IP ADDRESS

At the NETWORK menu,

① Move the cursor to the IP ADDRESS using the ▲ ,▼ buttons.

② Select the desired position using the ◀ , ▶ buttons and set the data value using the (-), (+) buttons.

6.6.1.3 SUBNET MASK

At the NETWORK menu,

① Move the cursor to the SUBNET MASK using the ▲ ,▼ buttons. ② Select the desired position using the ◀ , ▶ buttons and set the data value using the (-), (+) buttons.

6.6.1.4 GATEWAY

At the NETWORK menu,

① Move the cursor to the GATEWAY using the ▲ , ▼ buttons.

② Select the desired position using the ◀ , ▶ buttons and set the data value using the (-), (+) buttons.

6.6.1.5 DNS

At the NETWORK menu,

① Move the cursor to the DNS using the ▲ , ▼ buttons.

② Select the desired position using the ◀ , ▶ buttons and set the data value using the (-), (+) buttons.

6.6.1.6 PORT

At the NETWORK menu,

① Move the cursor to the PORT using the ▲ ,▼ buttons.

② Select the desired position using the ◀ , ▶ buttons and set the data value using the (-), (+) buttons.

NOTE: Port setting on DVR and client viewer software must be matched.

6.6.1.7 DYNAMIC IP SERVER

At the NETWORK menu,

① Move the cursor to the DHCP using the ▲ ,▼ buttons.

② Select “ON” using the (-), (+) buttons.

③ Move the cursor to the DYNAMIC IP SERVER using the ▲ , ▼ buttons.

④ Input the dynamic server IP using the (-), (+) buttons to change the value and the ▲ , ▼ buttons to move the cursor.

NOTE: DHCP is a protocol for assigning dynamic IP addresses to devices on a network.
** You have to connect with Router in case of using a network of PPPOE type because this unit doesn’t have a PPPOE protocol.

6.6.1.8 BACKUP IP SERVER

At the NETWORK menu,

① Move the cursor to the DHCP using the ▲ ,▼ buttons.

② Select “ON” using the (-), (+) buttons.

③ Move the cursor to the BACKUP IP SERVER using the ▲ , ▼ buttons.

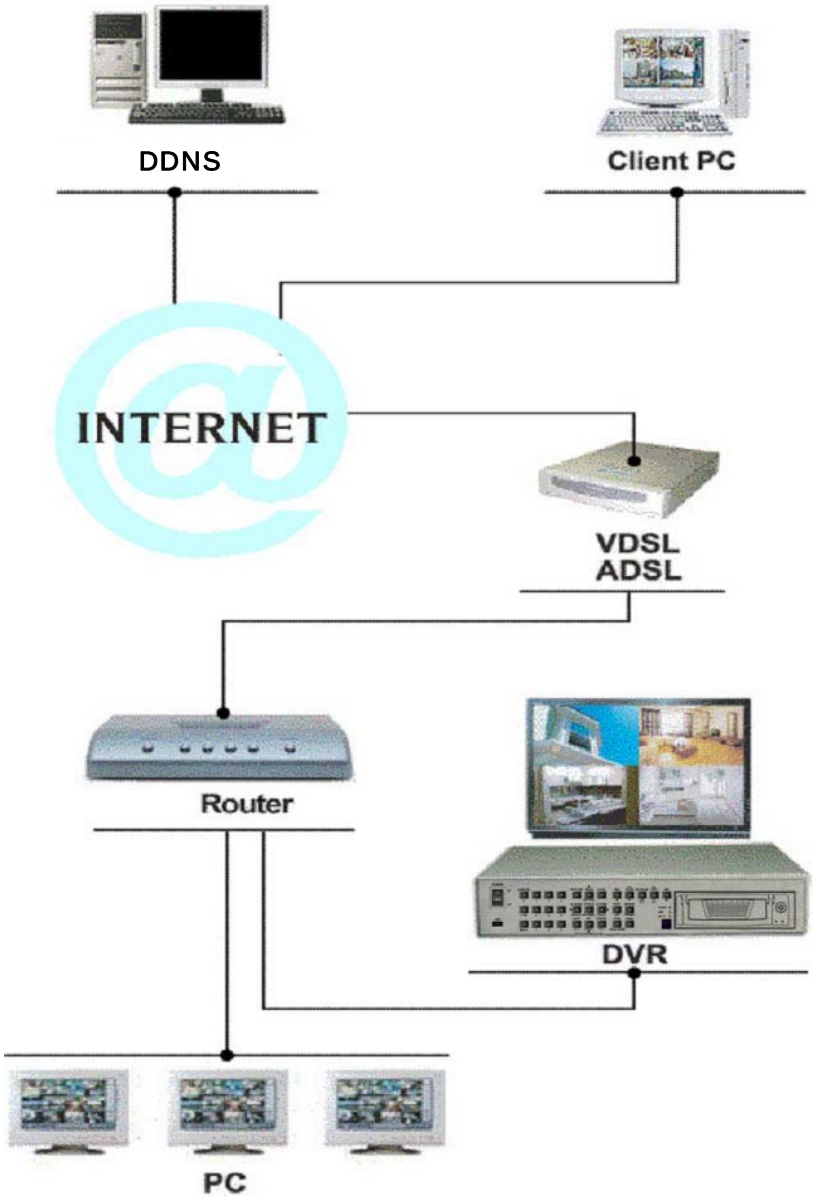
④ Input the backup server IP using the (-), (+) buttons to change the value and the ▲ , ▼ buttons to move the cursor.

NOTE: DHCP is a protocol for assigning dynamic IP addresses to devices on a network.
** You have to connect with Router in case of using a network of PPPOE type because this unit doesn’t have a PPPOE protocol.

6.6.1.9 NETWORK FRAME

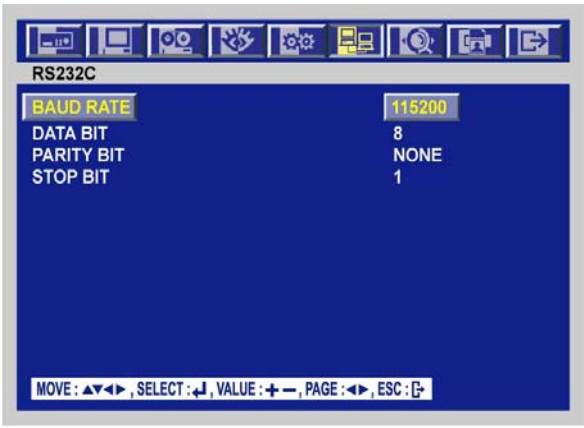
At the NETWORK menu,
① Move the cursor to the NETWORK FRAME using the ▲ , ▼ buttons.
② Select the value using the (-), (+) buttons.
STILL: Transmits only I-Picture of GOP(Group of Picture) to be saved in DVR.
MOTION: Transmits all images of GOP.

** Please refer to the below image in case of a PPPOE type



6.6.2 RS232C

At the LINK menu,
① Move the cursor to the RS232C using the ▲, ▼ buttons.
② Press the ENTER button when the cursor is on the RS232C and the following screen appears.



③ Use the ▲ ,▼ buttons to choose the item and use the (-), (+) buttons to set the data value.
④ To exit this RS232C menu, press the ESC button.

NOTE: The Set of value bring about is SERIAL port at DVR near side.

6.6.3 RS485

At the LINK menu,
① Move the cursor to the RS485 using the ▲,▼ buttons.
② Press the ENTER button when the cursor is on the RS485 and the following screen appears.
③ Use the ▲ ,▼ buttons to choose the item and use the (-), (+) buttons to set the data value.
④ To exit this RS485 menu, press the ESC button.

NOTE
SYSTEM ID : Unit distinction address at Remote keyboard.
BAUD RATE : Data transmission speed per second.
DATA BIT : Data transmission bit.
PARITY BIT : Data transmission error checking.
STOP BIT : Data transmission ending bit

6.6.4 PTZ

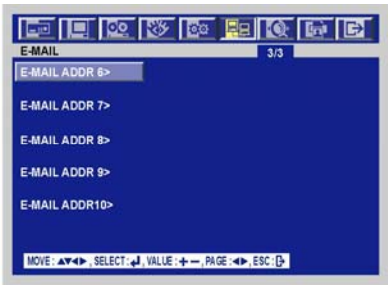
At the LINK menu,
① Move the cursor to the PTZ using ▲ , ▼ buttons.
② Press the ENTER button when the cursor is on the PTZ and the following 1 or 2 pages screen appears.

③ Select the desired channel using ▲ , ▼ buttons.
④ Use the (-), (+) buttons to select the right model of installed PTZ camera.
⑤ Press the ▶ button to set up a ID of the PTZ camera.
⑥ Use the (-), (+) buttons to select the desired ID.
⑦ Press the ◀ button to see the next page.
⑧ To exit this PTZ menu, press the ESC button.

6.6.5 E-MAIL

NOTE: If you want to use this function, you have to input DNS address.
Please refer to 6.6.1.

At the LINK menu,
① Move the cursor to the E-MAIL using ▲, ▼buttons.
② Press the ENTER button when the cursor is on the E-MAIL and the following screen appears.



6.6.5.1 SEND E-MAIL

At the E-MAIL menu,
Move the cursor to the SEND E-MAIL using the ▲ , ▼ buttons and select “ON” using the (-), (+) buttons to send e-mails when an event happened.

6.6.5.2 SMTP SERVER

At the E-MAIL menu,

① Move the cursor to the SMTP SERVER using the ▲ ,▼ buttons to input the e-mail sever address to be used by DVR.

② Press the ENTER button and the following screen appears.

③ Select the character using the ▲ ,▼ ,◀ ,▶ buttons and then press the ENTER button.

④ To exit this CHARACTER TABLE screen, press the ESC button.

6.6.5.3 DVR E-MAIL ADDR

At the E-MAIL menu,

① Move the cursor to the DVR E-MAIL ADDR using the ▲ ,▼ buttons to input the e-mail address to receive the e-mail when an event happened.

② Press the ENTER button and the following screen appears.

③ Select the character using the ▲ ,▼ ,◀ ,▶ buttons and then press the ENTER button.

④ To exit this CHARACTER TABLE screen, press the ESC button.

6.6.5.4 USER ID

At the E-MAIL menu,

① Move the cursor to the USER ID using the ▲ ,▼ buttons to input the e-mail account to be used by DVR.

② Press the ENTER button and the following screen appears.

③ Select the character using the ▲ ,▼ ,◀ ,▶ buttons and then press the ENTER button.

④ To exit this CHARACTER TABLE screen, press the ESC button.

6.6.5.5 PASSWORD

At the E-MAIL menu,

① Move the cursor to the PASSWORD using the ▲ ,▼ buttons to input the account password to be used by DVR.

② Press the ENTER button and the following screen appears.

③ Select the character using the ▲ ,▼ ,◀ ,▶ buttons and then press the ENTER button.

④ To exit this CHARACTER TABLE screen, press the ESC button.

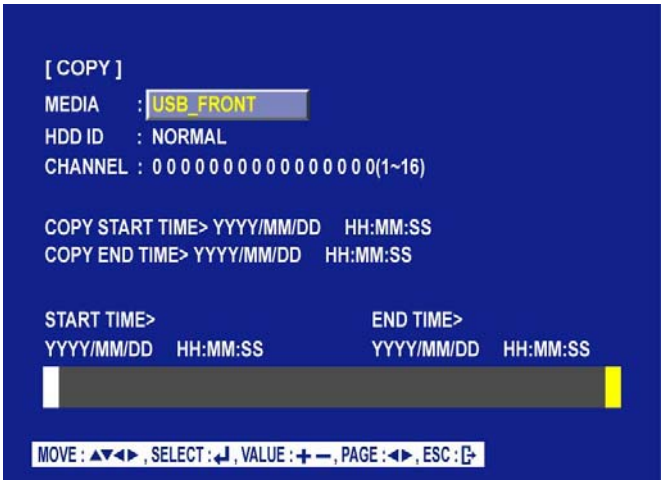
6.7 SEARCH

To set up the SEARCH menu,
① Move the cursor to the SEARCH icon using the ◀ , ▶ in the MENU screen.
② Press the ENTER button when the cursor is on the SEARCH icon and the following items appear.

** Please, refer to Search & Playback of Chapter 5 Operation.

6.8 COPY

To set up the COPY menu,
① Move the cursor to the COPY icon using the◀ ,▶ in the MENU screen.
② Press the ENTER button when the cursor is on the COPY icon and the following items appear.



** Please, refer to Copy of Chapter 5 Operation.

6.9 EXIT

At the MENU screen,
① Move the cursor to the EXIT icon using the ◀ , ▶ buttons.
② Press the ENTER button when the cursor is on the EXIT icon and the following items appear.

③ Move the cursor to the desired item using the ▲ ,▼ buttons and press the ENTER button.
- SAVE ONLY : Select this item if you want only to save the changed setup.
- SAVE AND EXIT : Select this item if you want to save the changed setup and exit this screen.
- EXIT WITHOUT SAVE : Select this item if you want not to save the changed setup before exiting this screen

Chapter 7 External Terminal Information

7.1 RS-485

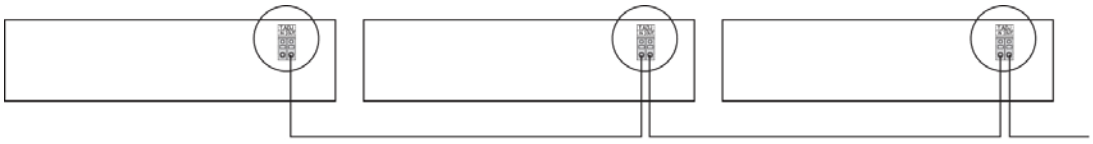
These ports are to control the connected PTZ cameras and can be used to connect the external controller.

No	DESCRIPTION	
1	TA(TX+)	RS485:Transmit data
2	TB(TX-)	RS485: Receive data
3	GND	

7.2 T.ADJ

Time adjust input port is high level at normal and check a signal every 100ms.
Time adjust output port is open at normal and a space cling to change a minute at GND.
During keep up 250ms

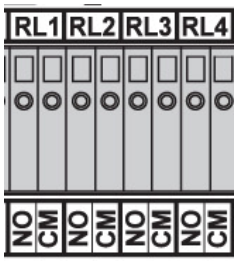
NO	DESCRIPTION	FALLING EDGE
1	TIME REFERENCE INPUT	TTL
2	TIME REFERENCE OUTPUT	



To other T.ADJ Input

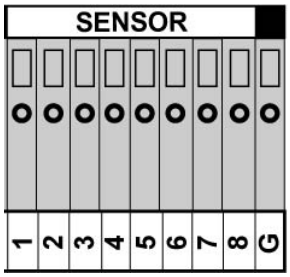
7.3 RELAY OUT

For controlling alarm output by relay



NO	DESCRIPTION		NO	DESCRIPTION	
1	NO(Normal Open)	ALARM	5	NO(Normal Open)	MD
2	CM(Common)		6	CM(Common)	
3	NO(Normal Open)	V-LOSS	7	NO(Normal Open)	POWER USER NOT USED HDD ERROR
4	CM(Common)		8	CM(Common)	

7.4 ALARM

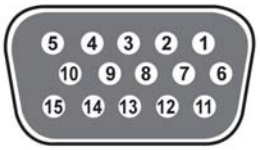


No	DESCRIPTION
1	EXTERNAL ALARM 1 INPUT
2	EXTERNAL ALARM 2 INPUT
3	EXTERNAL ALARM 3 INPUT
4	EXTERNAL ALARM 4 INPUT
5	EXTERNAL ALARM 5 INPUT
6	EXTERNAL ALARM 6 INPUT
7	EXTERNAL ALARM 7 INPUT
8	EXTERNAL ALARM 8 INPUT
G	ALARM IN COMMON GND

7.5 VGA

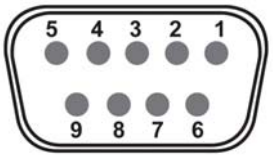
This DVR supports 1024 x 768 resolution & 70Hz refreshed rate in NTSC/PAL mode.

VGA



No	DESCRIPTION
1	RED(Red Video [75ohm, 0.7Vp-p])
2	GREEN(Green Video [75ohm, 0.7Vp-p])
3	BLUE(Blue Video [75ohm, 0.7Vp-p])
4~12	Reserved
13	HSYNC or CSYNC(Horizontal or Composite Sync.)
14	VSYNC(Vertical Sync.)
15	Reserved

7.6 SERIAL

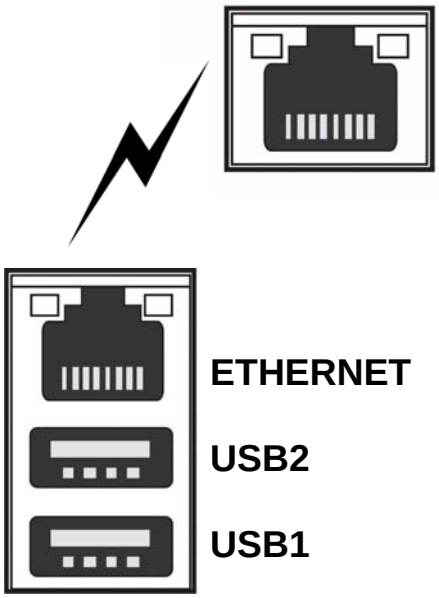


SERIAL

No		Description	No		Description
1	DCD	Not used	6	DSR	Not used
2	RxD	Receive data	7	RTS	Not used
3	TxD	Transmit data	8	CTS	Not used
4	DTR	+12V output	9	RI	Not used
5	GND	Signal Ground			

7.7 Ethernet / USB

For both 10Base-T and 100 Base-TX.



No	DESCRIPTION
1	N/C (Not Connected)
2	N/C (Not Connected)
3	RX-(Receive Data-)
4	N/C (Not Connected)
5	N/C (Not Connected)
6	RX+(Receive Data+)
7	TX-(Transmit Data-)
8	TX+(Transmit Data+)

No	DESCRIPTION
1	VCC
2	USB DATA -
3	USB DATA +
4	GND

Chapter 8 Specifications

1. VIDEO		ANX-470	ANX-870	ANX-1670
Input Level		1.0 Vp-p±10% Composite, 75Ω Balanced		
Video Standard		NTSC(525 lines)/ PAL(625 lines)/ AUTO		
Display Speed	NTSC	120fps	240fps	480fps
	PAL	100fps	200fps	400fps
Display Resolution	NTSC	720(H) X 480(V)		
	PAL	720(H) X 576(V)		
Monitor Output	Main	1.0Vp-p Composite, 75Ω Balanced (YC Output)		
	Spot	1.0Vp-p Composite, 75Ω Balanced		
	VGA	Analogue non-interlaced RGB. This DVR is compatible with TFT LCD monitor that support 50Hz VGA mode in PAL		
2. AUDIO				
LINE Input Level		0.5~1.4Vp-p@20kΩ		
Output Level		-10dB 1KΩ		
3. RECORDING				
*1 Compression Method		MPEG4 (Refer to the below table)		
*2 Recording speed		Refer to the below table		
Quality	User Define	Low/ Fine/ Superfine		
Scheduling		Available per hour/ each channel		
Mode		Manual / Event (Motion detection, Video loss, Sensor)/ Schedule		
Water Marking		Available		
4. HDD				
Capacity	Internal Storage	1 Removable HDD + 2 HDDs (1TB x 3)		
	External Storage	40 HDDs (10 HDDs in an external bay x 4)		
Speed		Min. 5400RPM, 7200RPM		
DMA		45MHz DMA		
Type		EIDE compatible		
Seek time		Faster than 9.0ms avg.		
External Bay Interface		USB 2.0		
5. ALARM		ANX-470	ANX-870	ANX-1670
Sensor Input	Terminal block	4 ports	8 ports	16ports
Alarm Output		4 Relay out (Programmable), Terminal block		
Motion Detection		Available per each camera/ Multi-detection level		
6. CONNECTORS		ANX-470	ANX-870	ANX-1670
Video Input	BNC	4 ports	8 ports	16ports
Loop Output	BNC	4 ports	8 ports	16ports
Monitor Output	Main	BNC 1 port		
	Spot	BNC 1 port		
	S-Video	BNC 1 port (4 pins mini DIN)		
	VGA(Option)	BNC 1 port (15 pins female DSUB)		
Audio Input		Stereo 2 ports: Audio 4 CH (Line only)		
Audio Output		RCA 1 CH (Line only) : Rear 1 port		
USB 2.0		HDD extension/ Mouse/ USB memory stick/ CD-RW/ DVD±RW (Front 1 port, Rear 2 ports)		

Serial		External control (RS-232C) / For debugging : 9 pins male DSUB		
Terminal Block		External control (RS-485)		
Alarm Input		4CH	8CH	16CH
Alarm Output		4 Relay output : 3 pins terminal block (Normal-Open, Normal-Close, Common) x 4		
Ethernet		RJ45 connector, 10/100 Mbps		
7. ELECTRICAL				
Power Source		AC (AC85V-235V) to DC(+12V/6.67A)Adaptor		
Power Consumption		App. 45W(Including 1 HDD)		
8. ENVIRONMENTAL				
Operating Temperature		0℃ ~ + 40℃		
Storage Temperature		-10℃ ~ + 60℃		
Humidity		30 ~ 90%RH (non-condensing)		
9. PHYSICAL				
Construction		Steel case		
Color		Black		
Dimension		420(W) x 68(H) x 330(D) mm		
Weight		App. 4kg (Including 1 HDD)		
10. BACKUP & COPY				
Digital Backup		Event Backup/ Mirroring		
Copy		External HDD/ CD-RW/ DVD±RW/ USB Stick (2.0)		
11. SEARCHING & PLAYBACK				
Searching Method		Time/ Event/ File/ Bookmark/POS/ Log file		
12. MULTI-REMOTE SURVEILLANCE				
Monitoring Environment		Client software/ Central monitoring system/ Web		
Max. connection DVR		16 DVRs accessible		
Max. client		Supporting multi-client (16 clients accessible)		
13. SYSTEM MONITORING & RECOVERY				
Monitoring		Software Watchdog		
Recovery		Auto-Reboot by Watchdog/ Automatic database recovery		
14. Others				
OS		Embedded Linux		
Duplexer or Triplexer		Triplexer		
Control Device		Front key/ Remote controller/ Mouse/ Network viewer Remote keyboard		
File compatibility with PC (Windows)		Compatible		
Number of event list/ Log file list		20,000/ 20,000		

< Recording Speed Table >

*Note 1, 2 Unit : ips

Model			4CH/ 8CH /16CH
Recording Speed	NTSC	360 x 240	120
		720 x 240	60
		720 x 480	30
	PAL	360 x 288	100
		720 x 288	50
		720 x 576	25
Compression Method			MPEG4

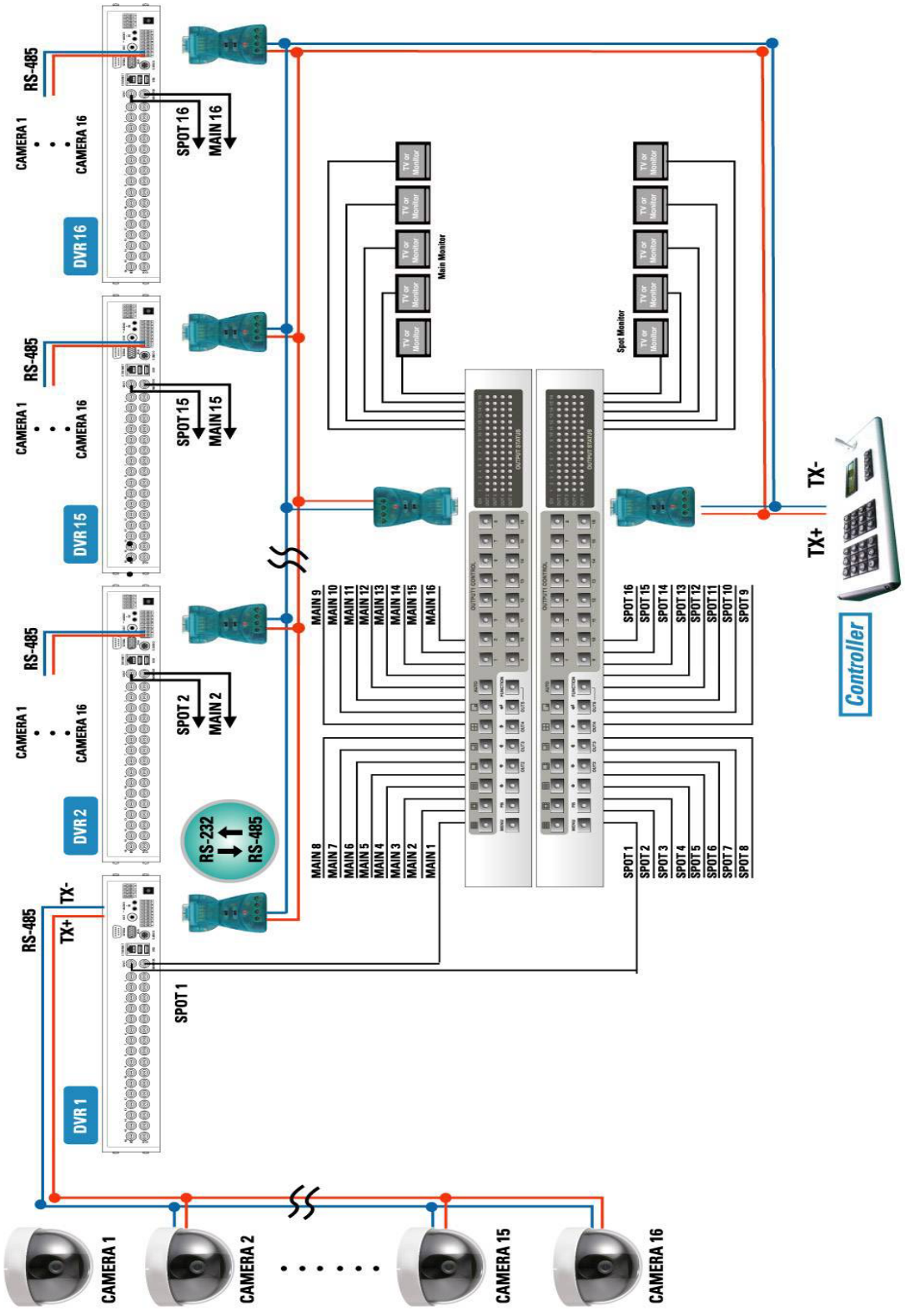
RECORDING CONDITIONS (NTSC)
Based on 120GB and connecting all channels.
This DVR can support up to 45TB with external HDD storage devices.
The following table was calculated by a still image.

RECORDING TIME TABLE

MODEL	RECORD IMAGE	IMAGE QUALITY	IMAGE SIZE	120ips(360x240) 60ips(720x240) 30ips(720x480)	60ips(360x240) 30ips(720x240) 15ips(720x480)
Mid-class DVR	Color Bar (Simple image)	SUPERFINE	2208 Bytes	125 Hours	250 Hours
		FINE	1792 Bytes	153 Hours	306 Hours
		LOW	1288 Bytes	224 Hours	448 Hours
	Cross Hatch (Complex image)	SUPERFINE	8680 Bytes	34 Hours	68 Hours
		FINE	5640 Bytes	50 Hours	100 Hours
		LOW	3696 Bytes	72 Hours	144 Hours

• The figures in the Recording Time Table were estimated under ideal recording conditions and may vary from your actual recording situation.
• In the Recording Time Table, multiply by 2 for recording hours with an 240 GB HDD and 3 for recording hours with a 360 GB HDD.
• The complexity of the image and the amount of motion recorded greatly influences the recording capacity of your hard drive (HDD). The higher the frames per second and the higher the video quality setting, the lower your HDD recording capacity will be. In the same manner, the lower the frames per second setting and the lower the video quality setting, the higher your HDD recording capacity will be.
• Note that the lower frame rate does not mean a lower video quality. The image quality remains the same whether the frames per second setting is set high or low. One frame per second is the same as taking a photo every second.
• There are several factors that influence the recording capacity of your hard drive.
(a) The number of cameras used
(b) The complexity of recording image
(c) The number of frame recorded per second
(d) The image quality setting – Superfine, Fine or Low

Chapter 9 256 Camera Integration system Block Diagram



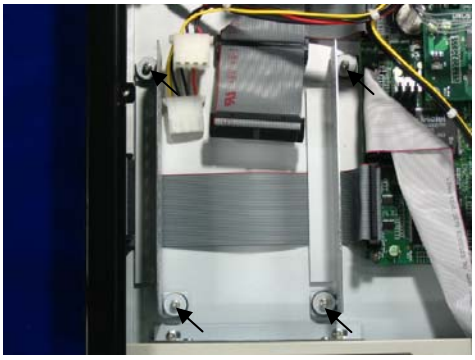
Chapter 10 HDD Installation Process

10.1 Internal HDD installation

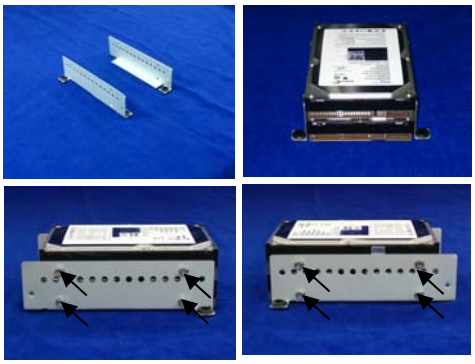
10.1.1 How to install the internal Hard Disk Drive(s).

1) Unscrew on the top, the side and the rear of this unit as indicated to remove the cover.

Caution) Plug out the power cord before addition / removal / change of HDD

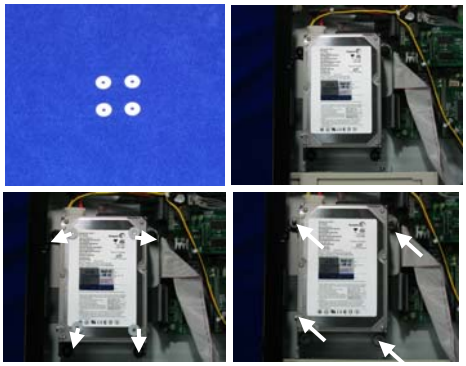


2) Remove the upper cover from the unit and unscrew to remove the rack mounts as indicated.

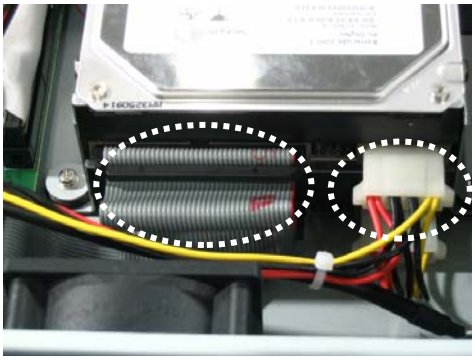


3) Fix the additional HDD to rack mount with the screws as indicated.

**** All HDDs must be set by slave or master***



4) Place the HDD(s) on the HDD plate and screw as indicated. Put the ring guides same as picture on the rubber before screwing.
(Set the master or slave of HDD before fixing the HDD(s) into DVR.
Refer to the HDD Jumper Setting Information.)



5) Connect the power and the flat cables as indicated.

6) Close the top cover and screw.

10.1.2 How to install Hard Disk Drive(s) into the removable HDD rack.

1) Grip the strap of removable HDD rack and pull it out.

2) Remove the cover of removable HDD rack and connect the HDD with the cables as indicated.

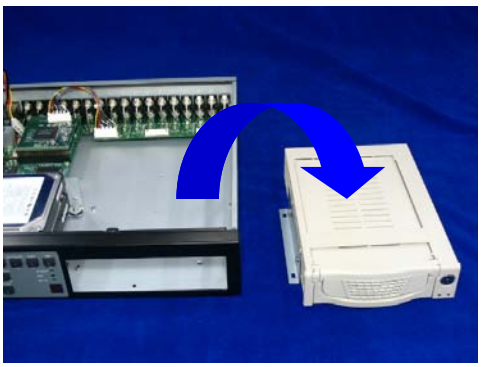
3) Put the HDD into the rack and close the top cover.

4) Fix the removable HDD rack into the unit and lock using the supplied key.

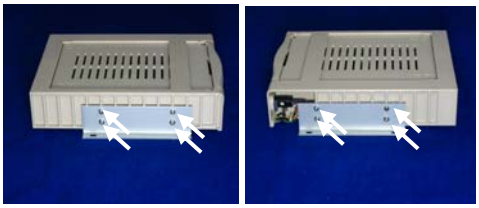
10.2 DVD±RW(or CD-RW) installation

1) Put out the cables and unscrew to remove the removable HDD rack as indicated.

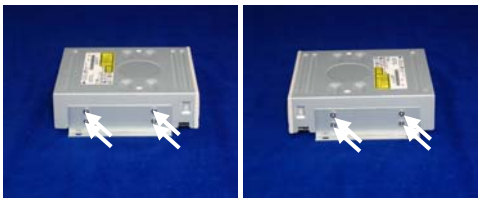
NOTE
If you want to install DVD±RW (or CD-RW) into this DVR, you need a USB to IDE interface board.
Please ask to a seller.



2) Remove the removable HDD rack from DVR set as the picture.

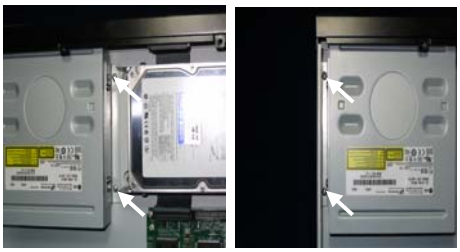


3) Unscrew to remove the HDD rack mount as indicated.

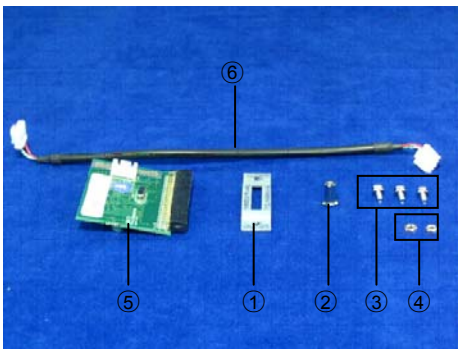


4) Screw to fix the rack mount on DVD±RW (or CD-RW) as indicated.

5) Put the DVD±RW(or CD-RW) into the unit as indicated.



6) Screw to fix the DVD±RW(or CD-RW) as indicated.



7) Prepare for the USB to IDE interface board and parts to connect it as the picture.

8) Connect the USB to IDE interface board and cable as the picture and then close the upper cover of the unit.

HDD Jumper Setting Information

Before install the Hard Disk Drive(s), please read the jumper setting information on the label. If the jumper is not set properly, the system will be disordered.
Jumper setting is different according to HDD model.

Please visit following web sites of Hard Disk Drive manufacturer for more information about jumper setting.

HITACHI : www.hitachi.com
MAXTOR : www.maxtor.com
SAMSUNG : www.samsunghdd.com
SEAGATE : www.seagate.com
WESTERN DIGITAL : www.westerndigital.com

Chapter 11 Network Viewer

The DVR Viewer is a dedicated client program that connects to, monitors and manages up to 16 DVRs simultaneously.

11.1 SYSTEM REQUIREMENT

The DVR Viewer receives, decodes and displays data for up to 16 DVRs or up to 256 cameras simultaneously requiring a powerful personal computer to take full advantage of the program. The following is the minimum and recommended PC specification.

	Minimum	Recommended
OS	Windows 2000	Windows XP
CPU	Pentium III 1 Ghz	Pentium IV 2.8 Ghz
RAM	128MB	512MB
Video Card	16MB	128MB
Free Space	50MB	2GB
Resolution	800x600x16	1024x768x32
DirectX	DirectX 7.0	DirectX 9.0c
Network	Ethernet 10/100B-TX	Ethernet 10/100B-TX
Port	Port 5400 ~ 5499 TCP	Port 5400 ~ 5499 TCP

11.2 Be sure to setup TWO of files together when you execute the viewer program on PC.

There are two of setup file on Viewer CD.
The one is viewer executer, the other is UDF Drivers.

1. What is UDF DRIVER?

The UDF Drivers is necessary to execute the copying data from CD/DVD on PC using Window XP. If do not setup this UDF Driver files, you will be faced with following problems.
This is applying to ***WINDOW OS*** only.

2. What is happen without UDF DRIVER?

The playback of copying data of CD/DVD is normal when connect to PC at first time. But, the second time playback is no working well on the small viewer when connect to PC.

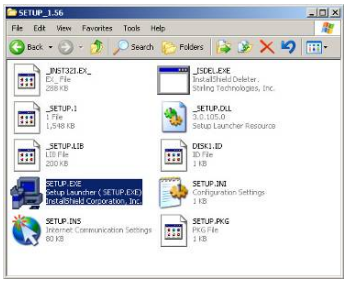
This is no continuous with ART-DVR and Viewer, it depend on Window OS. This problem is no appearing either latest Test and first stage of development. It caused problem from Update of windows. When use the Media such as CD-RW, DVD on PC, it needs to setup the "UDF Driver."
Under Window XP, our DVR automatically setup the UDF Driver. But the UDF Driver is modified under updated windows recently.
So, User who uses the window XP have to setup the UDF Driver manually.

3. How to setup the UDF DRIVER in safety.

After execute the viewer software, it automatically follows the setup window of UDF DRIVER.
You just press ENTER**.**

*UDF DRIVER software do not influence on others software programs.

11.3 INSTALLING THE DVR VIEWER

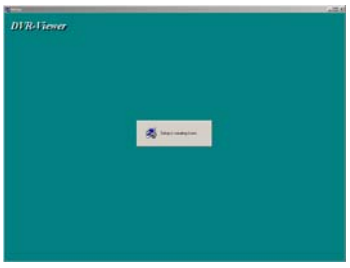


Insert the program CD into the CD-ROM or DVD-ROM drive of the computer and locate the SETUP.EXE file.

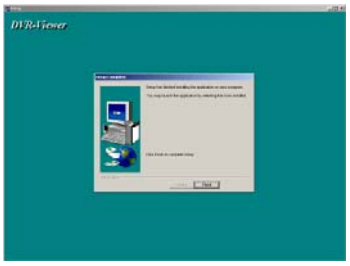
Double-click on the setup file, and the program will start the installation.

Click on NEXT.

The DVR viewer will be installed in its default folder of C:\Program Files\DVR\DVR-Viewer. If the folder needs to be changed, click on “BROWSE…” button and then select a different folder.



The setup program will run through its series of installation process.



Click on FINISH to complete the installation.

11.4 DVR VIEWER - LAYOUT

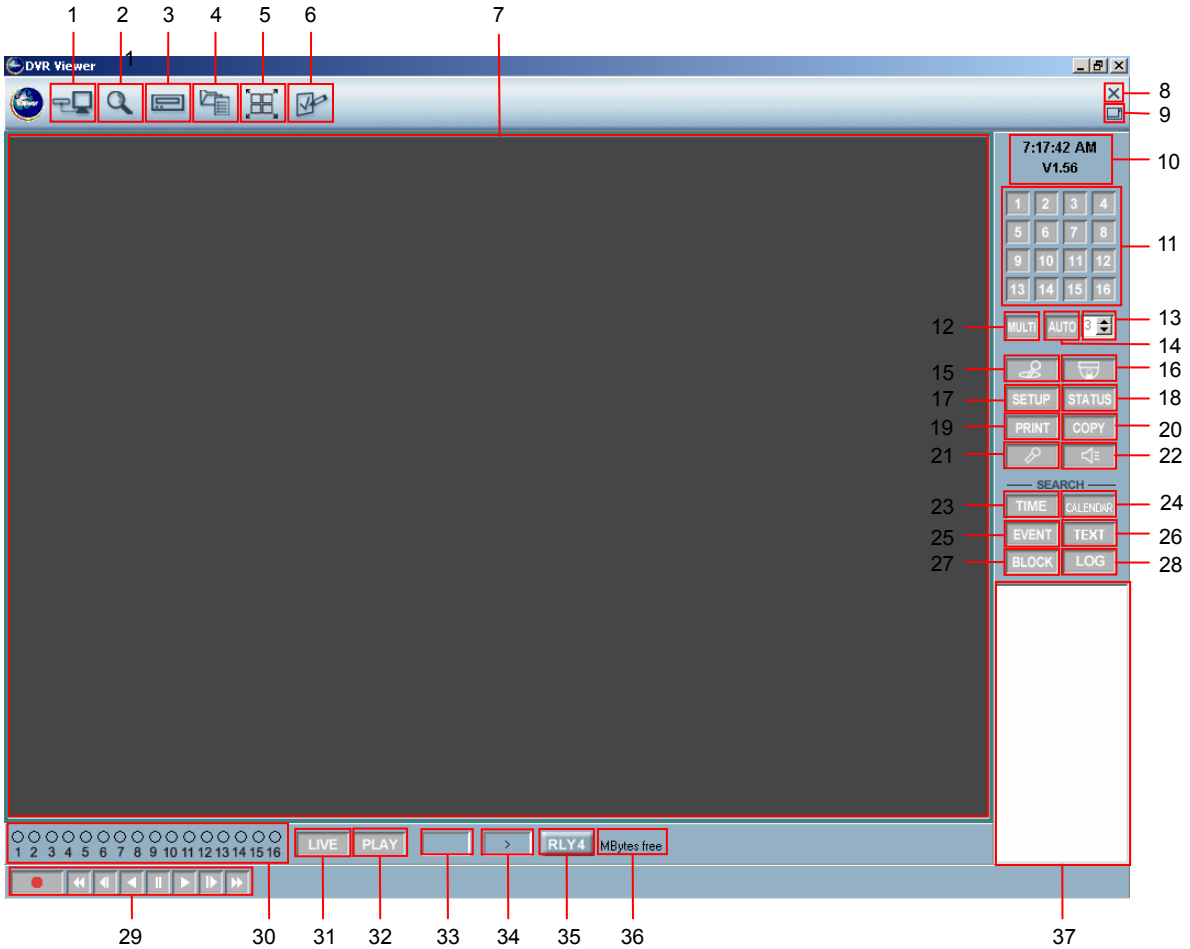
Locate the DvrViewer icon on the desktop and double-click on it to run the client software. The program can also be located in START- Programs – DVR-Viewer.

When the DVR Viewer is run for the first time, it prompts for the administrator's password.

Select and enter a password of up to 20 alphanumeric characters.

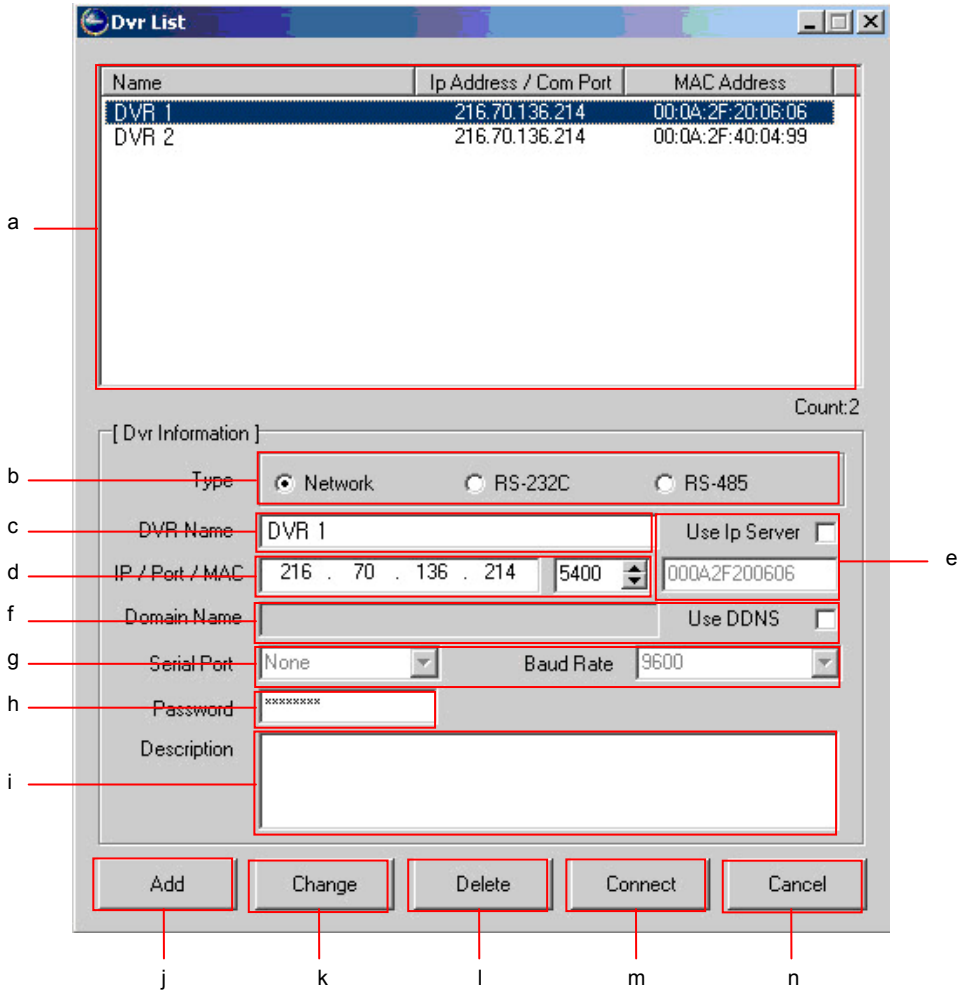
Click on OK to start the program.

The DVR Viewer has two display modes. When the program is run for the first time, it will be shown in the attached mode The DVR Viewer then can be switched into detached mode to view up to 16 DVR windows simultaneously.



1. DVR LIST

The DVR List adds or removes individual DVRs and offers a variety of connection options.



a. DVR List

The DVRs that have been added are listed in this box.

b. Connection Type

Select the connection type to the DVR.

c. DVR Name

Enter the DVR name.

d. IP Address and Port

Enter the IP address and the port number for the DVR, if known.

e. Use IP Server
The DVR can be located on the internet using the MAC address displayed in the status screen. If the MAC address is to be used, “Use IP Server” box must be checked.

f. Domain Name / Use DDNS
The DVR can be located on the internet using a domain name, or a web address. The DVR must be registered with a Dynamic DNS service in order to be located. If the Domain Name is to be used, “Use DDNS” box must be checked.

g. Serial Port
Select the COM port and the baud rate if RS-232C or RS-485 protocols are used to connect to the DVR.

h. Password
Enter the password to access the DVR remotely. The password level entered will grant the access privileges assigned by the administrator.

i. Description
Add comments or notes to the DVR in this box.

j. Add
Once all the information for the DVR has been entered, click on ADD to add to the DVR list.

k. Change
After changing the DVR information, click on CHANGE to update the DVR information.

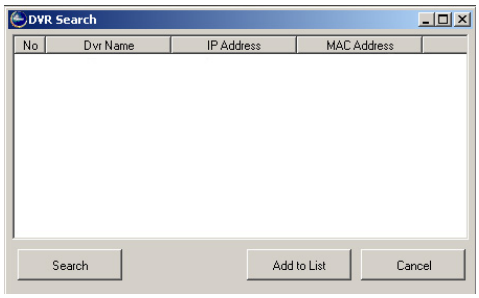
l. Delete
Highlight a DVR from the DVR List and then click on DELETE to remove from the DVR List.

m. Connect
Highlight a DVR from the DVR List and then click on CONNECT to remotely connect to the DVR.

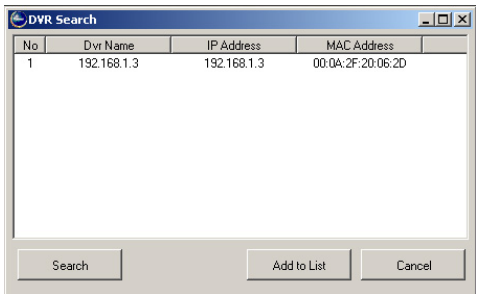
n. Cancel
Click on CANCEL to exit from the DVR List menu.

2. DVR SEARCH

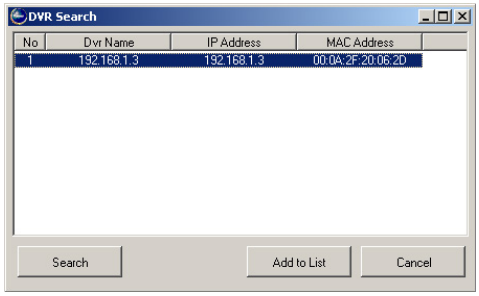
Within a local area network environment (LAN), it is possible to automatically scan and list available DVRs to be added to the DVR list.



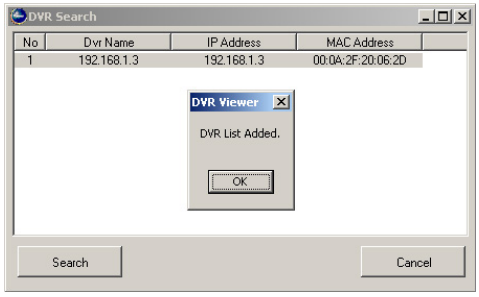
Click on DVR SEARCH to open the DVR Search window.



Click on SEARCH, and available DVRs will be listed.



Highlight a desired DVR to add to the DVR List, and then click on ADD TO LIST.

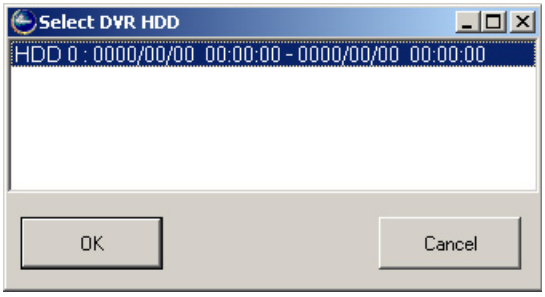


"DVR List Added." Message will appear with a successful addition to the DVR list.

Click on CANCEL to exit from DVR Search.

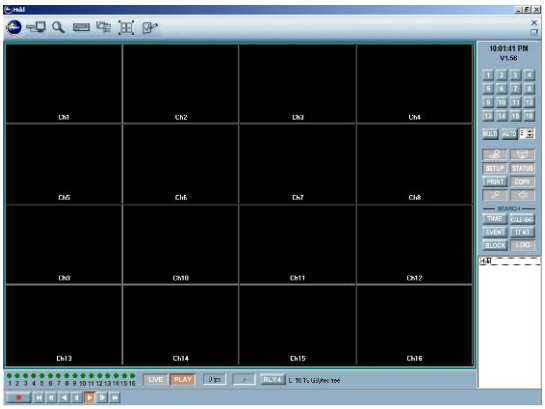
3. HDD SEARCH

The hard disk drive from the DVR can be directly connected to a PC, where the files can be searched and played back through the DVR Viewer.



Click on HDD SEARCH to open the HDD Search window

Select a hard disk drive, and then click on OK.

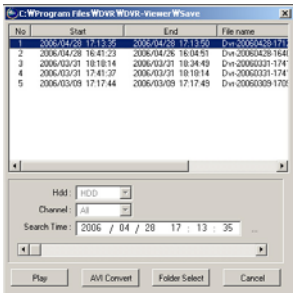


Recorded channels will be shown in the main channel display window.

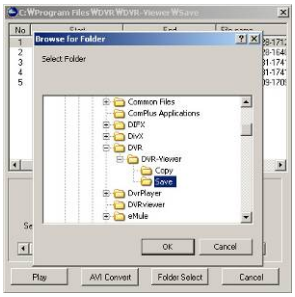
The content of the hard drive can be further searched and played back using any one of the search features, or using the playback buttons to playback in slow, fast, or paused mode.

4. FILE SEARCH

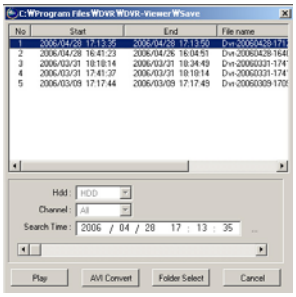
Backed up files and files that have been downloaded can be searched and played back.



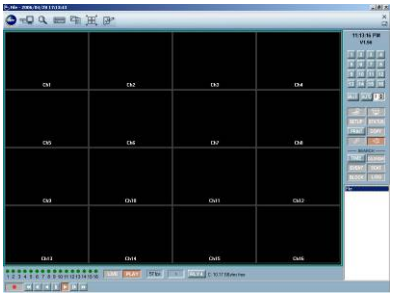
Click on FILE SEARCH to open the File Search window.



If the desired file is not listed in the current folder, then select the folder in which the files are saved by clicking on FOLDER SELECT.



Select a file to view, and then click on PLAY to begin the playback. The file can also be played back by double-clicking on it.



Once the playback starts, it can be slowed, paused and fast forwarded using the playback buttons.

The playback list can be viewed and selected again from the TIME search button once the playback starts.

5. ARRANGE WINDOW

Arrange window button works only in detached window mode (See #9). When viewing multiple DVRs, clicking on ARRANGE WINDOW sort and display all DVR connection windows in a tile format.

SINGLE DVR

1 ~ 4 DVRS

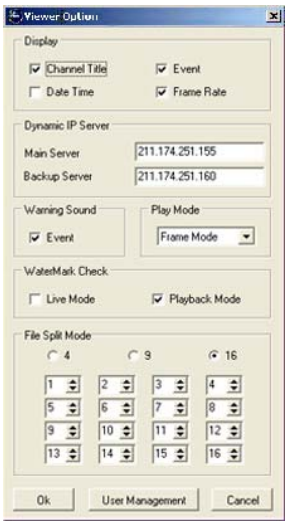
5 ~ 9 DVRS

10 ~ 16 DVRS

6. VIEWER OPTION

Viewer option defines the administrative options for the DVR Viewer, such as display options and the IP address of the Dynamic IP Server, and user management to create user name and passwords for additional users to access the DVR Viewer.

6.1 Viewer Option



Click on VIEWER OPTION to open the Viewer Option window.

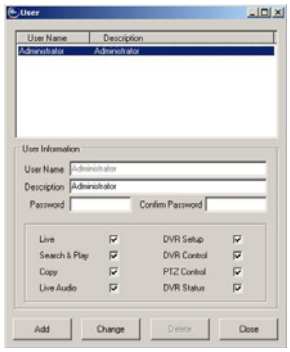
Check or uncheck various On Screen Display options as needed. By default, Channel Title, Event and Frame Rate are checked.

Modify the IP address for the Dynamic IP Servers as needed. The default IP addresses are:

- Primary Server: 211.174.251.155
- Secondary Server: 211.174.251.160

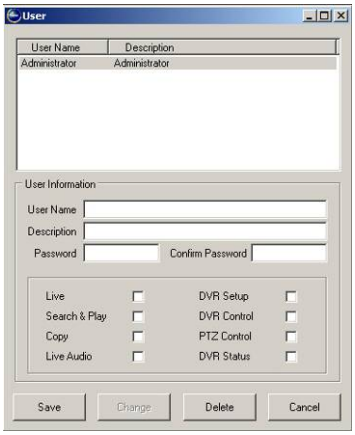
6.2 User Management

Click on USER MANAGEMENT to access the User Management window.

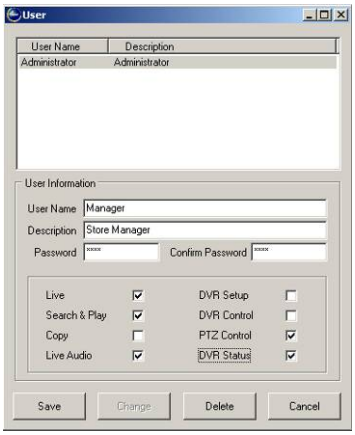


Modify the administrator's description and passwords as needed. Up to 20 alphanumeric characters can be entered for the password.

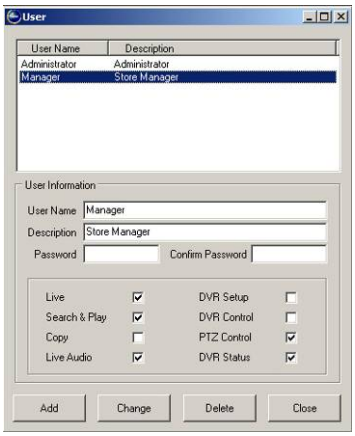
Press CHANGE to save the modification.



To add additional users, click on ADD.



Enter the user name, description for the user, password and access privileges, and then click on SAVE to add the new user.



The user setting can be modified by highlighting the user and clicking on CHANGE once the changes are made.

7. CHANNEL DISPLAY WINDOW
Live or playback video from the DVR is transmitted and displayed up to 16 channels. Each channel displays information regarding the specific channel according to the settings in VIEWER OPTION.

8. DVR CLOSE
The connected DVR can be disconnected by clicking on this button.

9. ATTACH / DETACH WINDOW
The channel display window can be attached or detached to the controls by clicking on this button.

10. TIME & VERSION DISPLAY
Displays the local time and current DVR Viewer version.

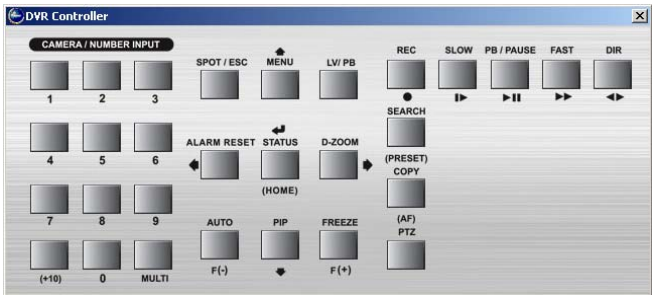
11. CHANNEL DISPLAY SELECTION
Any one of the single channels can be viewed in full screen mode by clicking on any channel numbers.

12. DISPLAY / MULTI CHANNEL VIEW MODE
Depending on the model of the DVR, the channel view modes can be changed by toggling on this button: 16 channel view mode, 13 channel view mode, 10 channel view mode, 9 channel view mode, 8 channel view mode, 7 channel view mode, 6 channel view mode, and quad view mode.

13. AUTOMATIC SEQUENCE DWELL TIME
Defines the dwell time for the automatic sequencing of view modes. Select from 1 to 9 seconds. The default is 3 seconds.

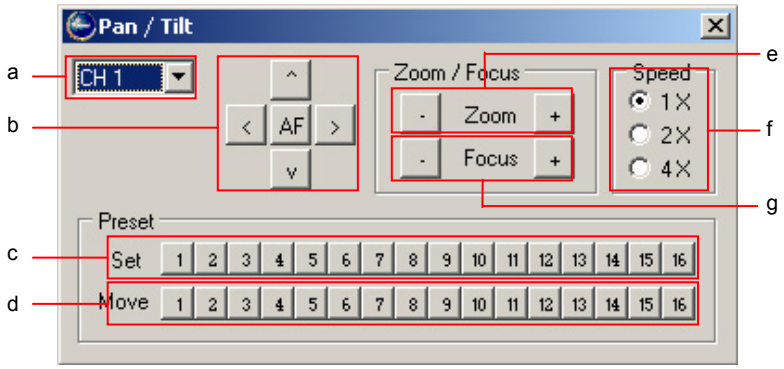
14. AUTOMATIC SEQUENCE
The channels sequence through different view modes automatically by enabling the AUTO button. Click on AUTO once more to stop the automatic sequence.

15. DVR CONTROLLER



Just as the IR remote controller, mouse and the front buttons on the DVR, the client software provides a controller to control the DVR remotely. The button functions are identical to the front buttons of this DVR. For more information on button functions, please see 3.1 FRONT PANEL LAYOUT.

16. PTZ CONTROLLER



Pan, Tilt and Zoom cameras can be controlled remotely through the DVR Viewer.

A. Channel select
Select the channel in which the PTZ camera is installed.

B. Directional buttons / Autofocus
Move the PTZ camera using the directional buttons. Toggle Autofocus on or off by clicking on AF.

C. Set preset points
Move the PTZ camera to the desired location, and then click on any of the 16 buttons to set a preset position.

D. Move to preset points
Click on any of the 16 buttons to move the PTZ camera to predefined preset position.

E. Zoom control
Zoom in and out by clicking on the – or + buttons.

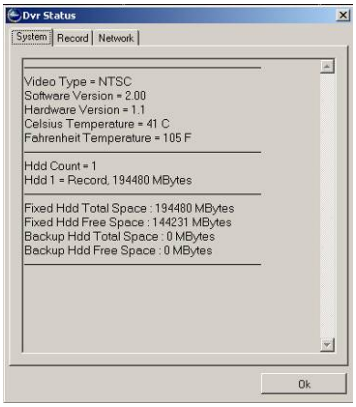
F. PTZ movement speed
Select the movement speed ratio.

G. Focus control
Focus in and out by clicking on the – or + buttons.

17.SETUP
Access the DVR setup window. Please see Section **VI – DVR Menu** Page.

18.STATUS
Displays the current DVR status on System, Record and Network.

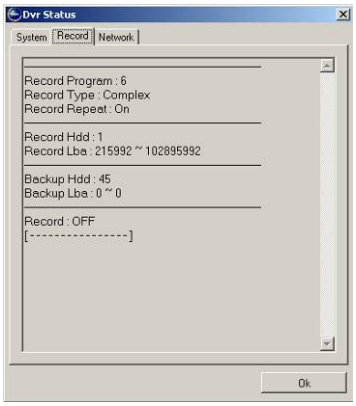
18.1 System



System status displays the following information:

- Video type
- Software version
- Hardware version
- Current temperature of the DVR in both Celsius and Fahrenheit
- Total number of hard disk drives
- Recording mode of the hard disk drives
- Total space of fixed hard disk drive
- Remaining free space of fixed hard disk drive
- Total space of backup hard disk drive
- Remaining free space of backup hard disk drive

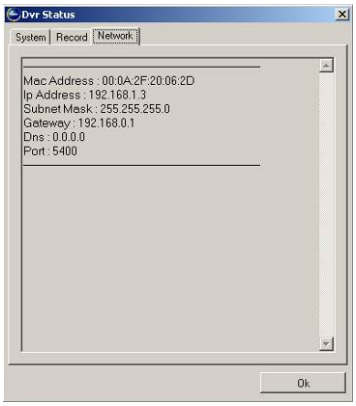
18.2 Record



Record status displays the following information:

- Record program
- Event record mode
- Record repeat
- Number of record hard disk drives
- Logical Block Address of the record hard disk drives
- Number of backup hard disk drives
- Logical Bock Address of the backup hard disk drives
- Record status

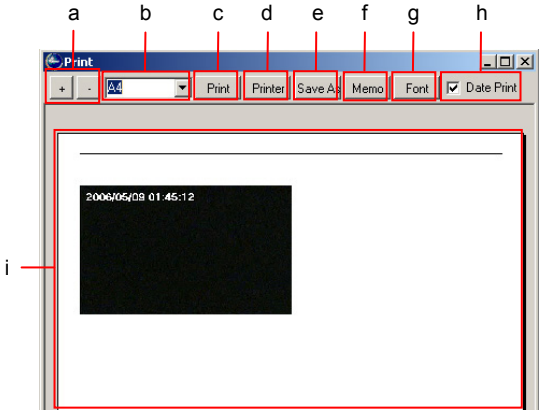
18.3 Network



Network status displays the following information:

- Mac address
- IP address
- Subnet mask
- Gateway
- DNS
- Port

19.PRINT
In live or playback mode, select any of the channels and then click on PRINT to bring up the screen print window.



a. Zoom in / out
Click the + or – button to zoom in and out for the detailed view of the picture.

b. Paper size
Select the paper size. Available paper sizes are A3, A4, A5, B4, B5, Legal and Letter.

c. Print
Send the picture to the printer.

d. Printer
Select a printer to send the picture.

e. Save as
The picture can be saved as a JPEG or Bitmap format.

f. Memo
Add the memo for the picture to be printed.

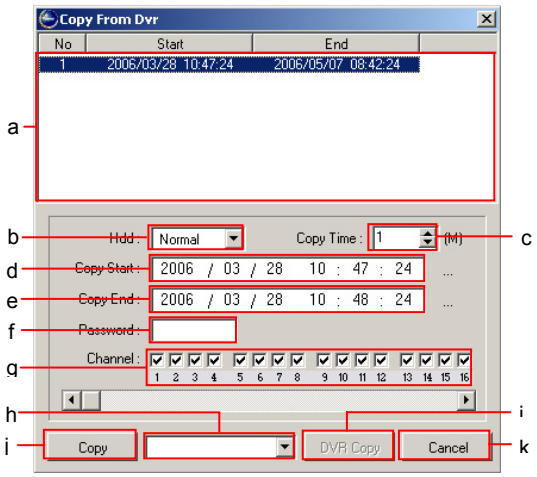
g. Font
Select the font for the memo.

h. Date print
Select the date print option on or off.

i. Preview window
The picture to be printed is previewed in this section.

20.COPY

The data on the DVR can be downloaded onto the PC using the COPY function. The data can also be backed up directly onto available backup media on the DVR.



a. Available data

Displays available data to be downloaded.

b. Hard disk drive selection

Select the hard disk drive to download from. If unknown, leave the selection on NORMAL.

c. Copy time

Define the interval of the file to be downloaded. Available time interval is 1 through 60 minutes. As the value is adjusted, the COPY END value will be automatically adjusted.

d. Copy start

Enter the starting time of the data to be downloaded.

e. Copy end

Enter the end time of the data to be downloaded.

f. Password

Encrypt the downloaded copy with a password. Up to 8 numbers can be entered for the password.

g. Channel

Select the channels to be downloaded.

h. DVR media

Select the media on which the DVR will utilize for backup. All three USB ports and the internal DVD burner can be selected.

i. Copy

Click on copy after all parameters for downloading.

j. DVR copy

After selecting the media to be backed up on the DVR, click on DVR COPY to begin the backup process on the DVR.

k. Cancel

Exit from the COPY window.

1. MICROPHONE / TALK
For the voice communication over the internet, click on the MICROPHONE button and then talk into an available microphone.

2. SPEAKER / LISTEN
Listen in on any of the four channels with audio recording over the internet. Bring any one of the channels with audio recording to full screen to listen into a specific channel.
3. TIME SEARCH
Search for a specific time for remote playback using a time line. Please see 10.5.1 TIME SEARCH under 10.5 DVR VIEWER – PLAYBACK MODE on page.

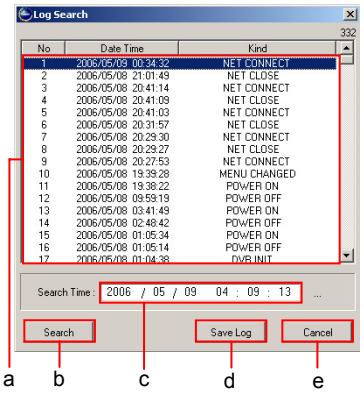
4. CALENDAR SEARCH
Search for a time for remote playback using a calendar based search window. Please see 10.5.2 CALENDAR SEARCH under 10.5 DVR VIEWER – PLAYBACK MODE on page.

5. EVENT SEARCH
Search for events for remote playback. Please see 10.5.3 EVENT SEARCH under 10.5 DVR VIEWER – PLAYBACK MODE on page.

6. TEXT SEARCH
Search for text strings or keywords for Point of Sales integrated DVRs. Please see 10.5.4 TEXT SEARCH under 10.5 DVR VIEWER – PLAYBACK MODE on page.

7. BLOCK SEARCH
Search on Logical Block Address for remote playback. Please see 10.5.5 BLOCK SEARCH under 10.5 DVR VIEWER – PLAYBACK MODE on page.

8. LOG SEARCH
View a list of events that occurred on the DVR.



a. Log list window
List of DVR logs from the most recent to the oldest.

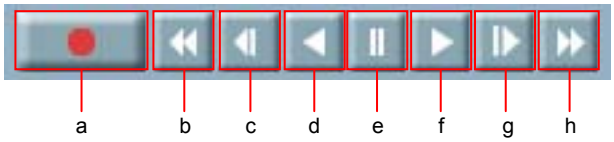
b. Search
Click on search to view available log list.
c. Search time
Select the year, month, date, hour, minutes and seconds of the *end* of the log list to retrieve.

d. Save log
Save the log list onto the computer.

e. Cancel
Exit from the log search window.

9. RECORD / PLAYBACK BUTTONS

The remote playback can be controlled just as on the DVR. The remote playback can be played in normal, slow, and fast modes in both forward and reverse direction.
The DVR Viewer can also record the remote transmission onto the computer's hard disk drive.



a. Record
Click on the RECORD button to start recording on to the computer. When recording, the box below the main channel display window will be outlined in red.

b. Rewind
This button can be toggled for rewind speed of 2x, 4x, 8x, 16x, 32x, 64x and 128x.

c. Reverse slow
This button can be toggled for a slow reverse playback speed of 1/2x, 1/4x, 1/8x, 1/16x, 1/32x, 1/64x and 1/128x.

d. Reverse play
Normal speed playback in reverse direction.

e. Pause
Pause the playback during remote playback or live monitoring.

f. Play
Normal speed playback in forward direction.

g. Forward slow
This button can be toggled for a slow forward playback speed of 1/2x, 1/4x, 1/8x, 1/16x, 1/32x, 1/64x and 1/128x.

h. Fast forward
This button can be toggled for fast forward speed of 2x, 4x, 8x, 16x, 32x, 64x and 128x.

10. CHANNEL STATUS

Displays the status of the channels.

- Grey: non-recording mode
- Yellow: manual recording mode
- Red: event recording mode
- Green: schedule recording / playback mode

11. LIVE

When the DVR Viewer is connected to the DVR, it starts with the live view mode, and this button will be pressed and highlighted. Click on LIVE to toggle back to live view mode.

12. PLAY

The remote playback mode can be entered by clicking on PLAY button, just as the PLAY button is pressed on the DVR. When the PLAY button is clicked the remote playback will start with the oldest data on the DVR. Next time PLAY button is clicked the playback will resume from where it was left off.

13. FRAMES PER SECOND
Displays the frame rate of incoming live stream or playback stream.

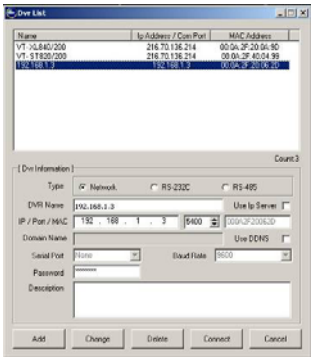
14. LIVE / PLAYBACK BUTTON STATUS
During live or playback, this window will display the direction and the speed of the playback direction.

15. RELAY 4
Manually trigger relay 4 on the DVR. The relay 4 option must be set to user option.

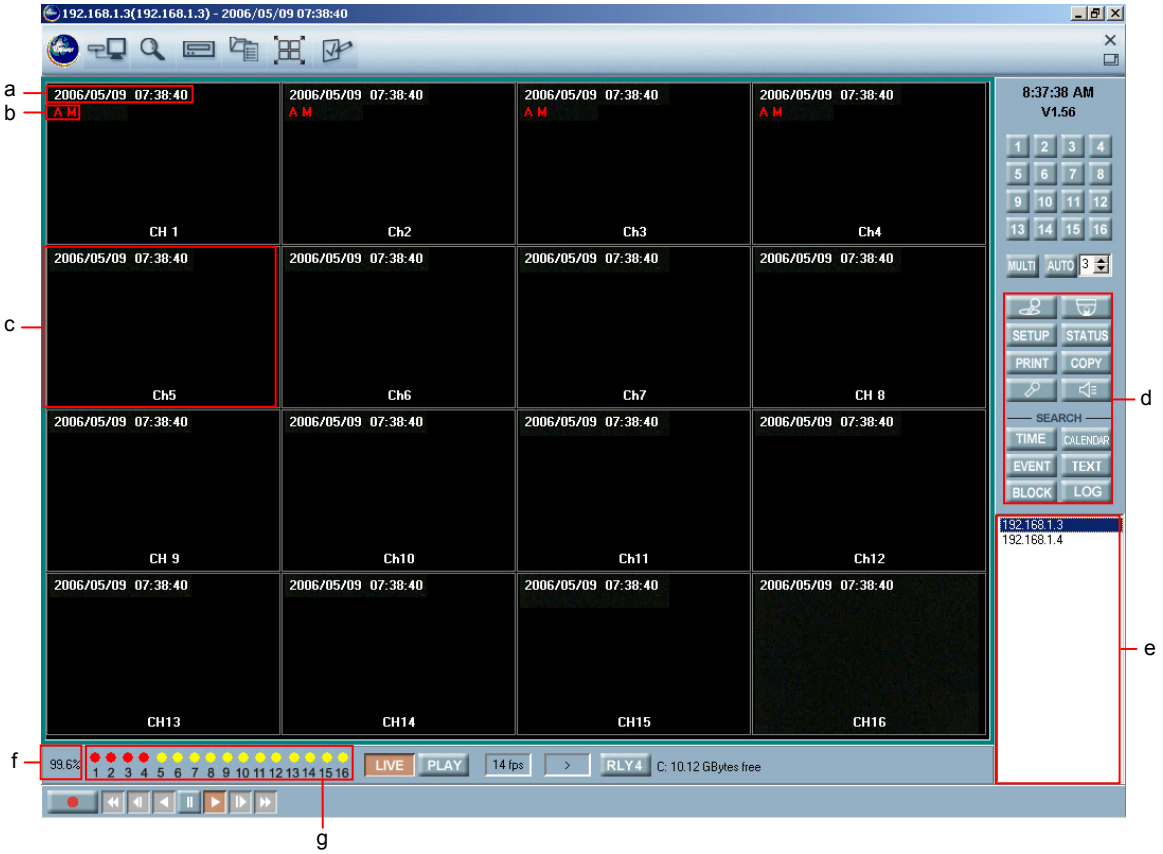
16. AVAILABLE SPACE ON COMPUTER
When connected to a DVR, this section will display available recording space on the computer.

17. ACTIVE DVR / FILE / HDD
Displays a list of connective DVRs, playback from FILE SEARCH and HDD SEARCH.

11.5 DVR VIEWER - LIVE MODE



Click on the DVR LIST, highlight a desired DVR and then click on CONNECT.



a. DVR's local time
Displays the DVR's local date and time

b. Event message
Displays the channel's event messages, alarm and motion.

c. Channel window
The DVR channel window can be double-clicked for a full screen mode. The channel window can also be zoomed by dragging the left mouse button over the channel window. The size of the box created by dragging will be the outline of the channel window to be zoomed in.

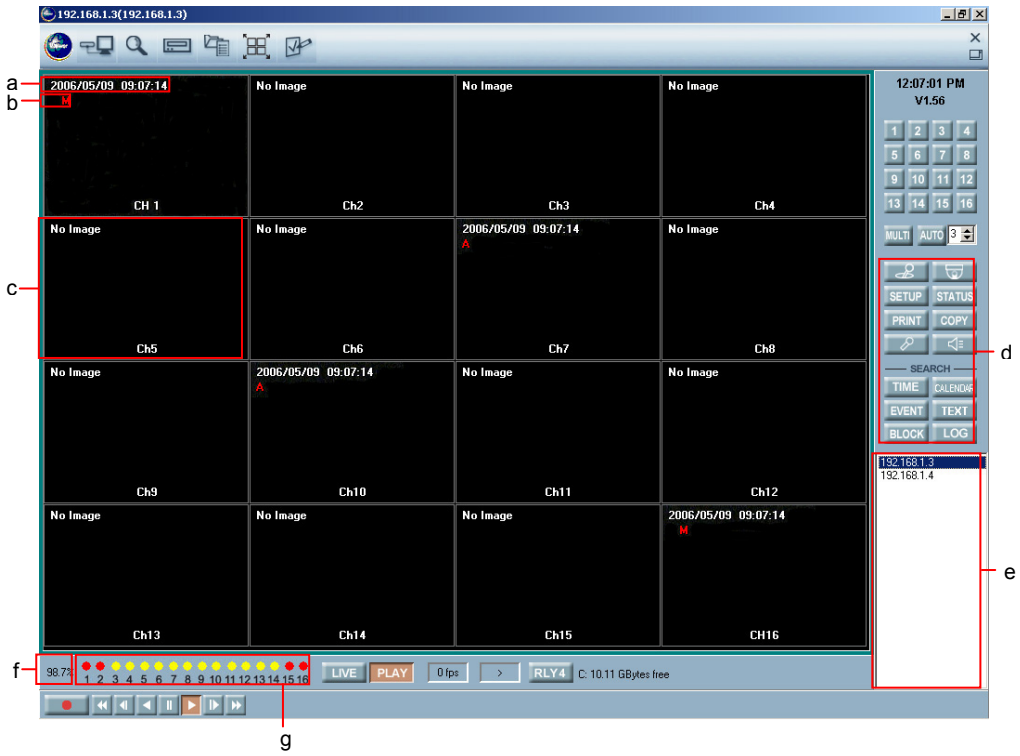
d. DVR functions
Some of the DVR functions may not be available depending on what user account the DVR Viewer has been signed on with, and also with what user level password the DVR has been connected to.

e. Remaining HDD space
Displays remaining hard disk drive space on the DVR.

f. Channel status
Displays the status of the channels.

11.6 DVR VIEWER – PLAYBACK MODE

Any DVRs that are connected online can be accessed to do data search remotely from the DVR and then transmit to the DVR viewer for remote playback.



a. DVR's playback time
Displays the DVR's playback date and time. Channels without recording show NO IMAGE.

b. Event message
Displays the channel's event messages at the time of the recording.

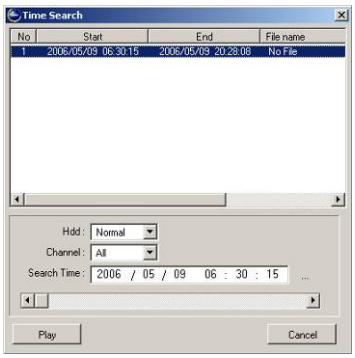
c. Channel window
The DVR channel window can be double-clicked for a full screen mode. The channel window can also be zoomed by dragging the left mouse button over the channel window. The size of the box created by dragging will be the outline of the channel window to be zoomed in.

d. DVR functions
Some of the DVR functions may not be available depending on what user account the DVR Viewer has been signed on with, and also with what user level password the DVR has been connected to.

e. Remaining HDD space
Displays remaining hard disk drive space on the DVR.

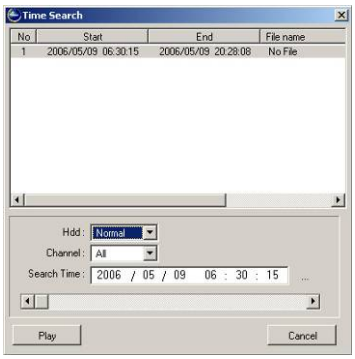
f. Channel status
Displays the status of the live channels.

11.6.1 TIME SEARCH

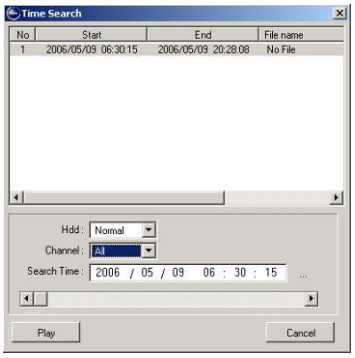


Click on TIME to display the Time Search window.

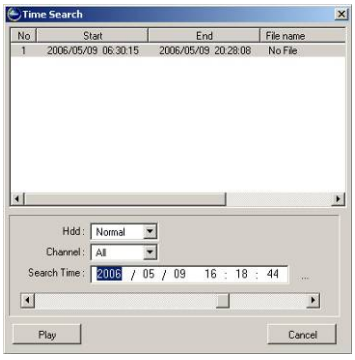
The start and the end of the recorded data will be displayed.



Select the hard disk drive for the remote playback. If unknown, leave the selection to Normal.



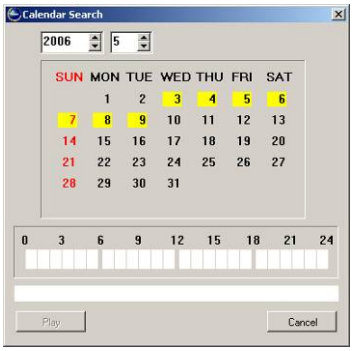
Select the channel for playback.



Select the year, month, day and time for the playback, or slide the time bar to the desired time.

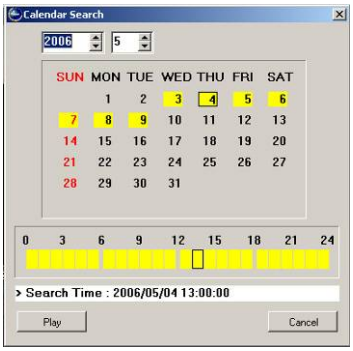
Click on PLAY to begin the remote playback.

11.6.2 CALENDAR SEARCH



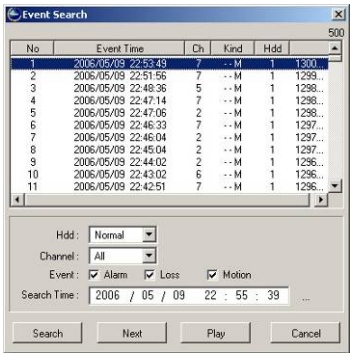
Click on CALENDAR to display the Calendar Search window.

Dates with recorded data will be highlighted in yellow.



Select the year, month, date, and the hour block, and then click on PLAY to begin the remote playback.

11.6.3 EVENT

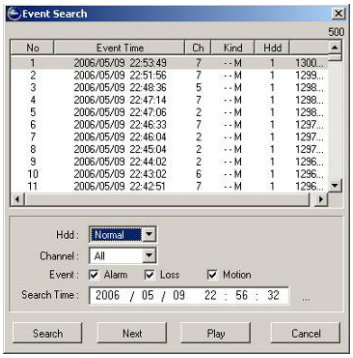


Click on EVENT to display the Event Search window.

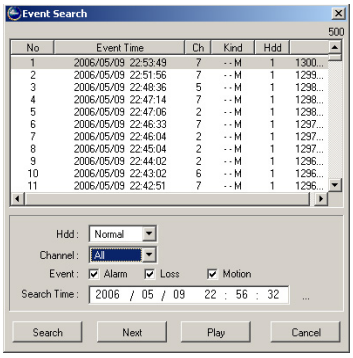
The first 500 events are listed chronologically, from the most recent to the oldest.

Select an event and then click on PLAY to begin remote playback.

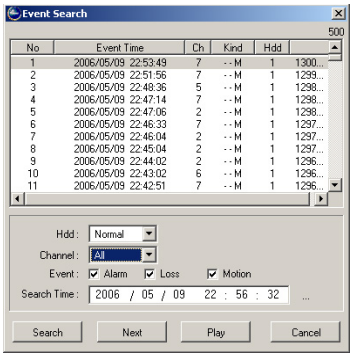
If the desired event is not listed in the current window, then follow the following steps.



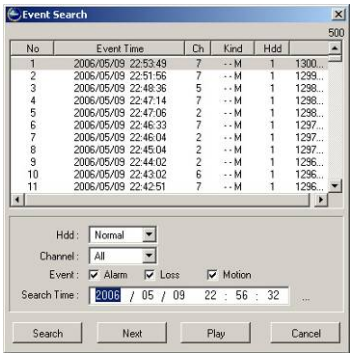
Select the hard disk drive for the remote playback. If unknown, leave the selection to Normal.



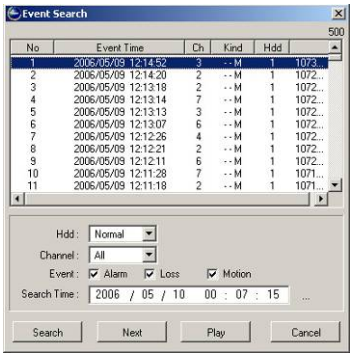
Select the channel for playback.



Select the event categories.

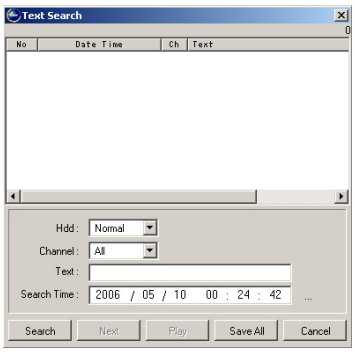


Select the year, month, day and time for the *end* of the event list for playback.

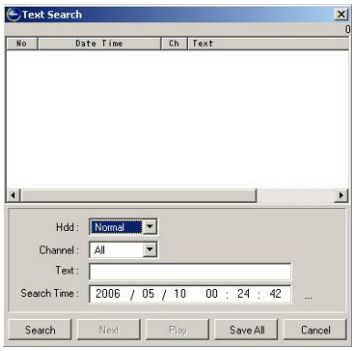


The list can be advanced to the next 500 lists by clicking on NEXT. Highlight the desired event and then click on PLAY to begin the remote playback.

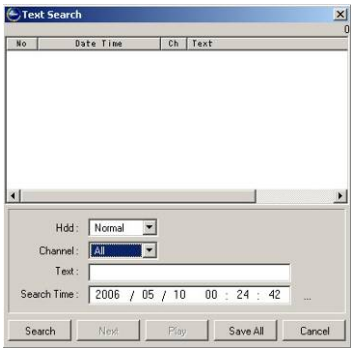
11.6.4 TEXT



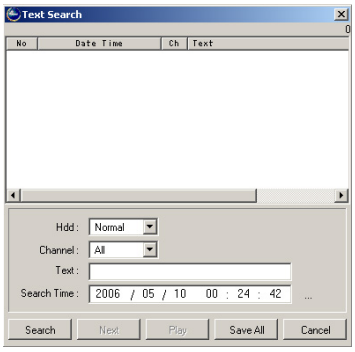
Click on TEXT to display Text Search window.



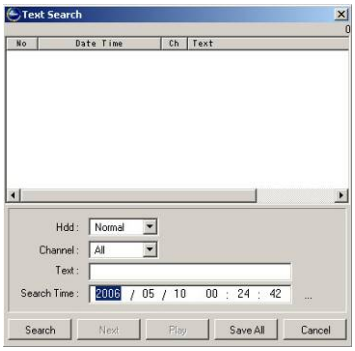
Select the hard disk drive for the remote playback. If unknown, leave the selection to Normal.



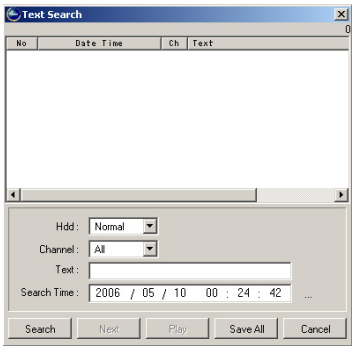
Select the channel for the text string search.



Enter the text string to search. Leave blank for a wild card (all items) search.



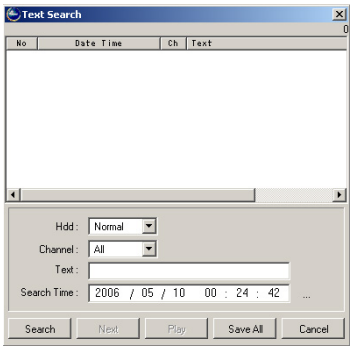
Select the year, month, day and time for the *end* of the search time.



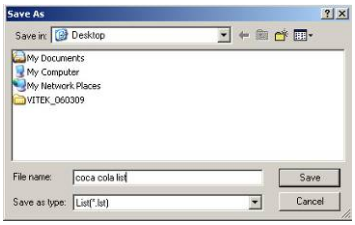
Click on SEARCH to list data that match the text string.

If the text string search was left blank, then it will display all items.

Click on NEXT for the next 500 listing.

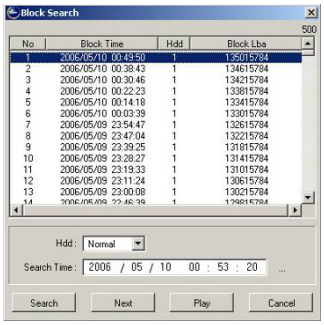


Highlight a text string, and then click on PLAY to begin the remote playback.



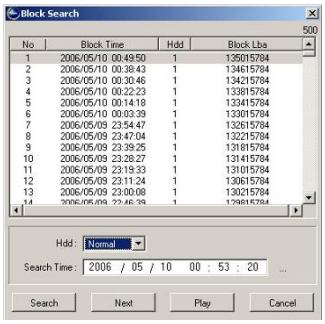
The listing can be saved as a List file format.

11.6.5 BLOCK

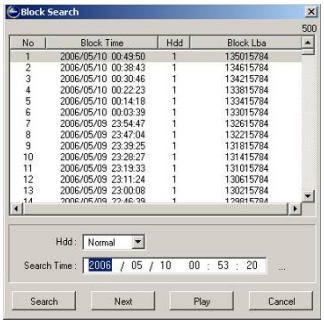


Click on BLOCK to display the Logical Block Address Search window.

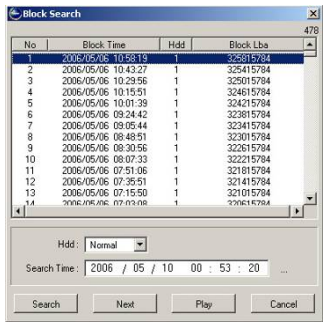
The first 500 data is displayed in chronological order, from the most recent to the oldest.



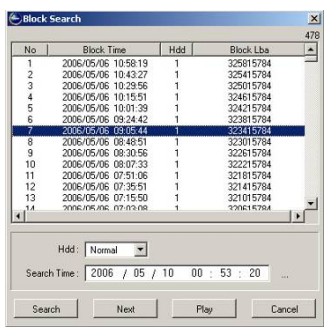
Select the hard disk drive for the remote playback. If unknown, leave the selection to Normal.



Select the year, month, day and time for the end of the data.



If the desired date and time is not found, then click on NEXT to display the next 500 Logical Block Addresses.

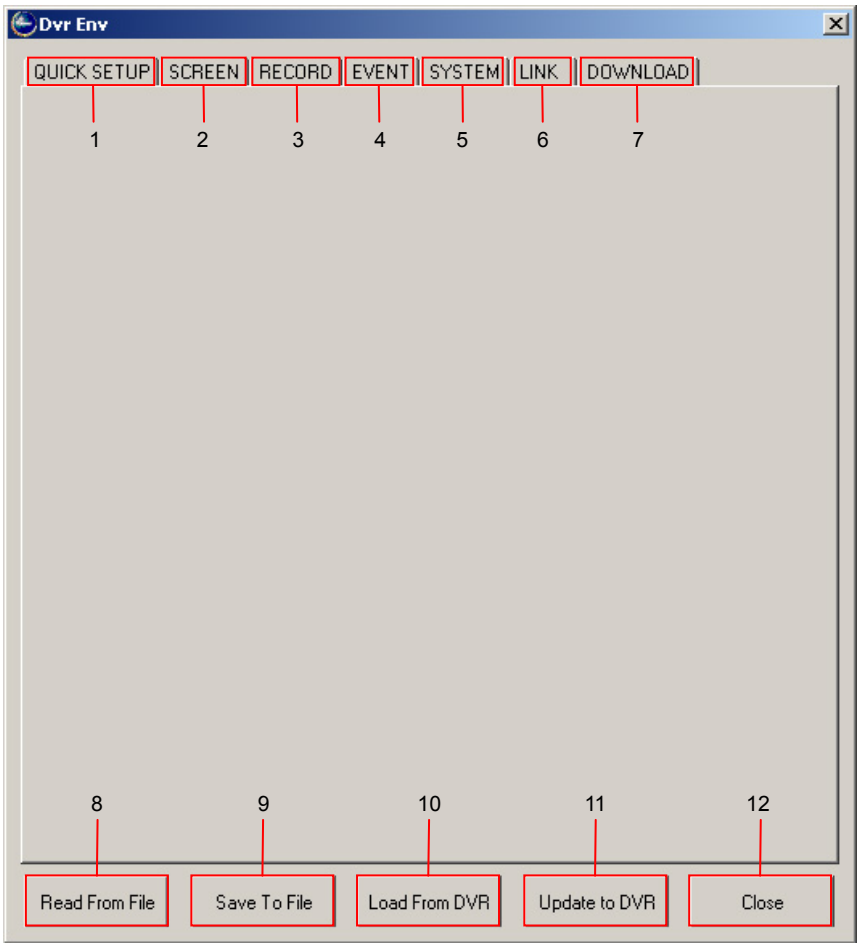


Highlight a desired block time and then click on PLAY to begin the remote playback.

11.7 DVR PLAYER – SETUP

The DVR Viewer can change the settings on the DVR remotely. The features and settings are identical to that of the DVR menu. For more information, please see V. DVR MENU on page.

Click on SETUP and the password prompt will be displayed. Enter the administrator's password and then click on OK to display the DVR setup menu.



1. QUICK SETUP
2. SCREEN SETUP
3. RECORD SETUP
4. EVENT SETUP
5. SYSTEM SETUP
6. LINK

7. DOWNLOAD
Update the DVR's firmware using the download menu.

8. READ FROM FILE
Load DVR settings from a DVR setup file.

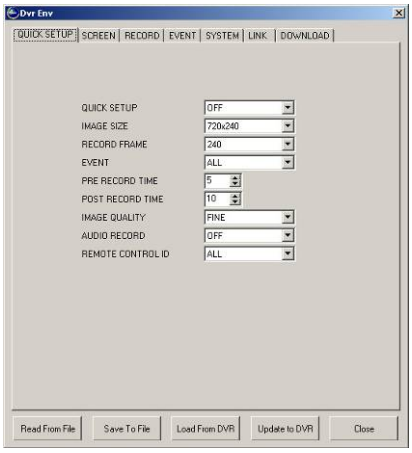
9. SAVE TO FILE
Save DVR settings to a DVR setup file.

10. LOAD FROM DVR
Load current DVR settings.

11. UPDATE TO DVR
Upload changed settings to DVR.

12. CLOSE
Close DVR Setup menu.

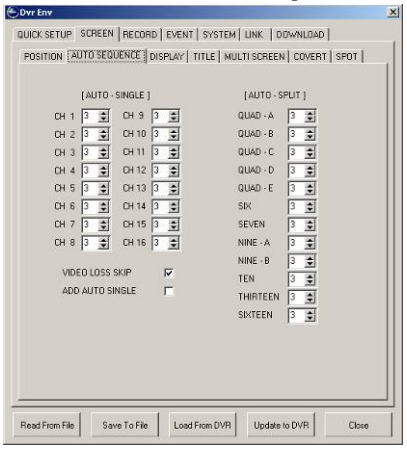
11.7.1 QUICK SETUP



a. Quick Setup: on / off.
b. Image Size: 360 x 240 / 720 x 240 / 720 x 480.
c. Record Frame: 16 through 480, depending on image size.
d. Event: off, all, alarm, v-loss, motion, alarm & loss, alarm & motion, loss & motion.
e. Pre Record Time: 0 through 5 seconds.
f. Pose Record Time: 0 through 60 seconds.
g. Image Quality: low, fine, superfine.
h. Audio Record: on / off.
i. Remote Control ID: all, 11 ~ 14, 21 ~ 24, 31 ~ 34 and 41 ~ 44.

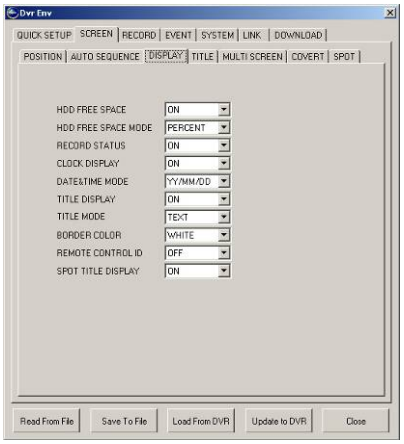
11.7.2 SCREEN

11.7.2.1 Auto Sequence



a. Auto-Single: select the single channel dwell time.
b. Auto-Split: select the multi channel dwell time.
c. Video Loss Skip: check / uncheck.
d. Add Auto Single: check / uncheck.

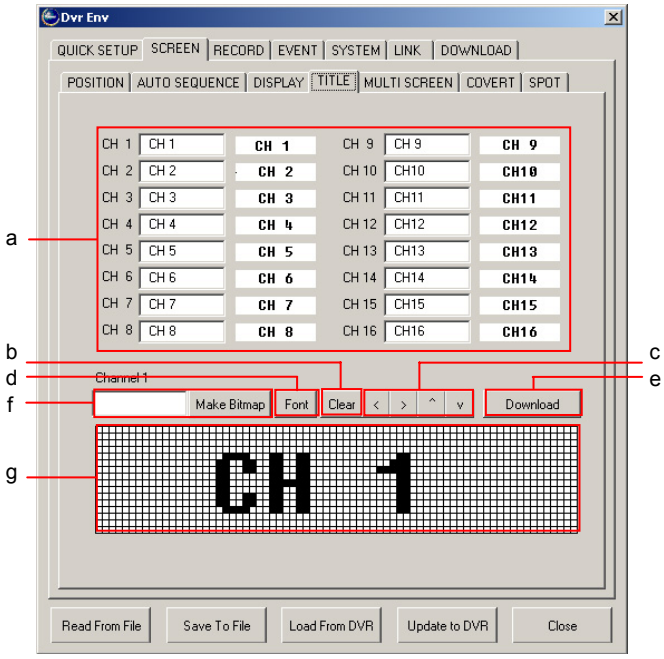
11.7.2.2 Display



HDD Free Space: on / off.

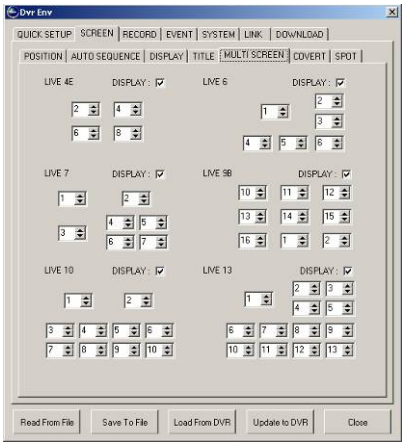
a. HDD Free Space Mode: percent / gigabyte.
b. Record Status: on / off.
c. Clock Display: on / off.
d. Date & Time Mode: YY/MM/DD, MM/DD/YY, DD/MM/YY.
e. Title Display: on / off.
f. Title Mode: text / bitmap.
g. Border Color: white / black.
h. Remote Control ID: on / off.
i. Spot Title Display: on / off.

11.7.2.3 Title



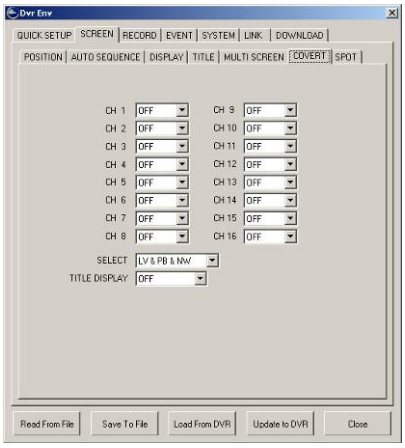
a. Channel Title (text mode)
Enter up to eight alphanumeric characters for channel titles.
b. Clear
Clear the bitmap drawing.
c. Move
Move the bitmap drawing in the grids.
d. Font
Select the font for bitmap conversion.
e. Download
Download the bitmap to the DVR.
f. Make Bitmap
Enter the title to be converted into bitmap.
g. Bitmap Grid
The title can be drawn here.

11.7.2.4 Multiscreen



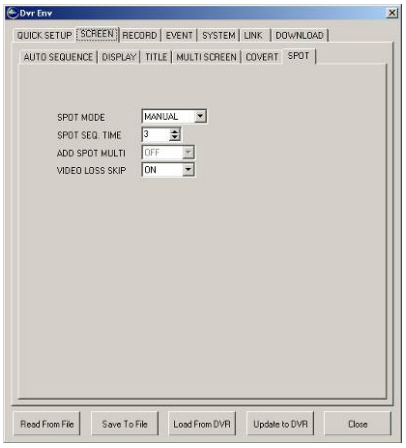
Customize the channels to be displayed in 4E, 6, 7, 9B, 10 and 13 channel view modes.

11.7.2.5 Covert



a. Channels 1 through 16: on / off.
b. Select: live, play, network, LV & PB, LV & NW, PB & NW, all.
c. Title Display: on / off.

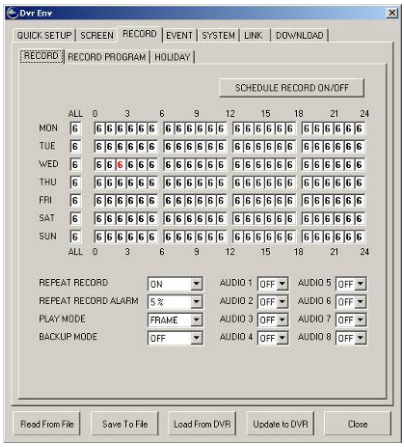
11.7.2.6 Spot



a. Spot Mode: manual, event, sequence.
b. Spot Sequence Time: 1 to 60 seconds.
c. Add Spot Multi: disabled.
d. Video Loss Skip: on / off.

11.7.3 RECORD

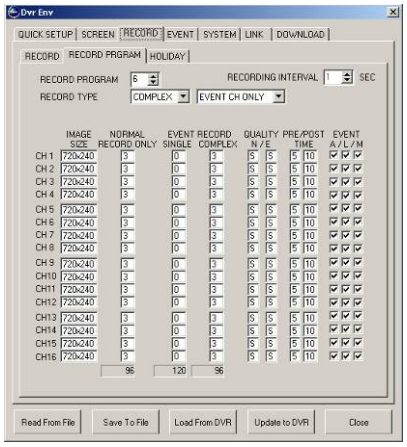
11.7.3.1 Record



a. Schedule Record: click on a hour block and then click Schedule Record on / off.
b. Monday through Sunday: select the record program.
c. Repeat Record: on / off.
d. Repeat Record Alarm: 5% through 10%, off.
e. Backup Mode: mirror, event, off.
f. Audio 1 through 8: on / off.

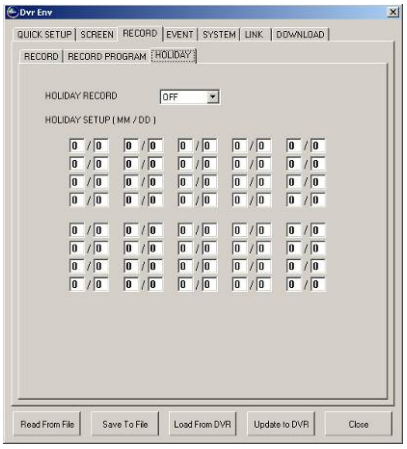
11.7.3.2 Record Program

Define the values for the record settings. Use the mouse scroll button to change the values, or the left/right buttons on the keyboard.



a. Record Program: 0 to 9.
b. Record Type: single / complex, event channel only / all channels.
c. Image Size: select the recording image size.
d. Normal Record: select the recording rate for manual recording.
e. Event Record Single: select the recording rate for single event recording.
f. Event Record Complex: select the recording rate for complex event recording.
g. Quality Normal: select the image quality for manual recording.
h. Quality Event: select the image quality for event recording.
i. Pre Record Time: select the pre-event recording time.
j. Post Record Time: select the post-event recording time.
k. Event Alarm / Video Loss / Motion: check / uncheck
l. event recording options.

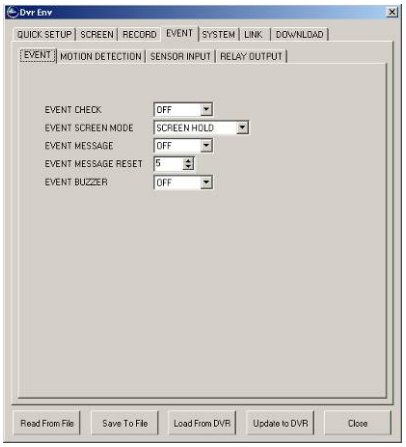
11.7.3.3 Holiday



a. Holiday Record: on / off.
b. Holiday Setup: enter the holidays.

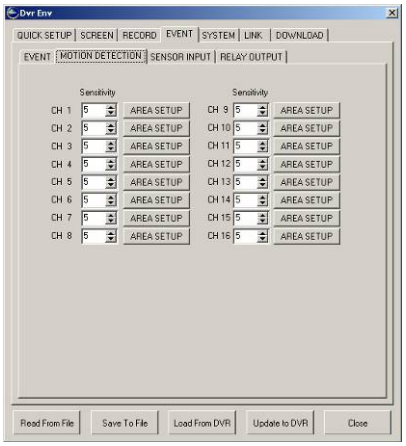
11.7.4 EVENT

11.7.4.1 Event

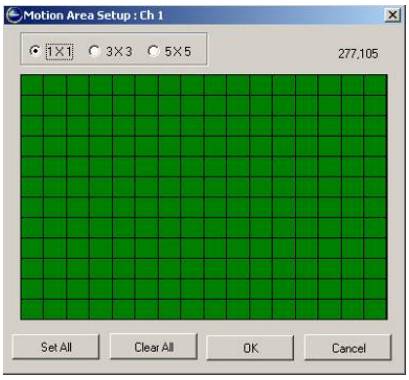


a. Event Check: on / off.
b. Event Screen Mode: screen hold, event full, event multi, event full return, event multi return.
c. Event Message: on / off.
d. Event Message Reset: 1 to 30 seconds.
e. Event Buzzer: on / off.

11.7.4.2 Motion Detection



a. Sensitivity: select the motion detection sensitivity.
b. Area Setup: click on AREA SETUP to display the motion grid window.

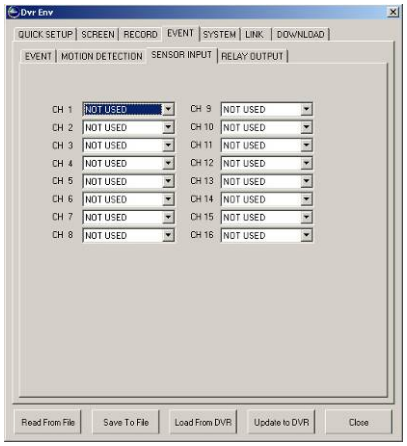


Select the grid size.

Use the left mouse button to draw motion detection area and use the right mouse button to erase motion detection area.

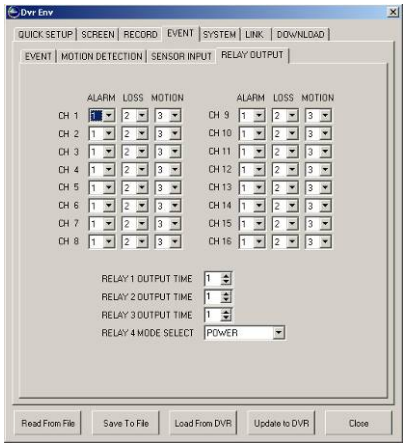
Use the buttons at the bottom of the screen to set or clear motion detection all area of the screen.

11.7.4.3 Sensor Input



Select the circuit type for the sensor input.

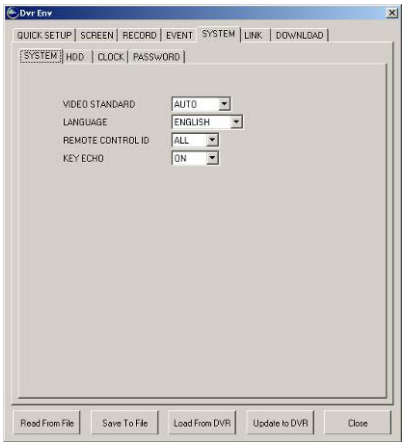
11.7.4.4 Relay Output



a. Channel 1 through 16: select the relay output for the events.
b. Relay 1 through 3 output time: 1 to 30 seconds.
c. Relay 4 mode select: not used, HDD error, power, user.

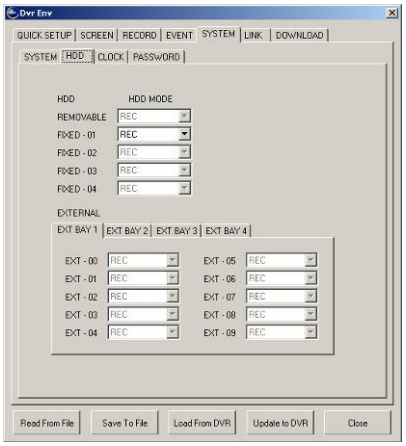
11.7.5 SYSTEM

11.7.5.1 System



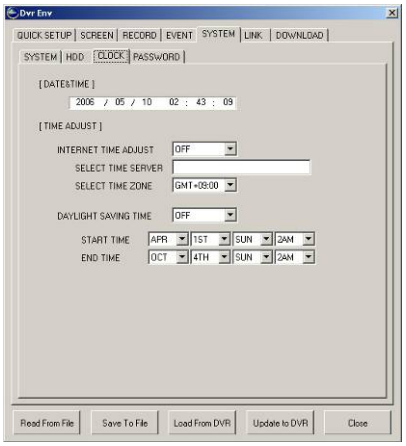
a. Video Standard: PAL, NTSC, auto.
b. Language: English, Korean, Japanese, Polish, Spanish, Russian and Chinese.
c. Remote Control ID: All, 11 through 14, 21 through 24, 31 through 34 and 41 through 44.
d. Key Echo: on / off.

11.7.5.2 HDD



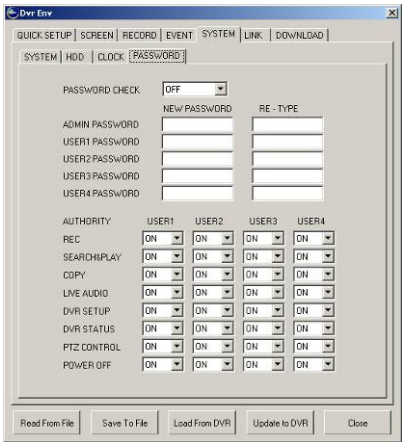
Select the recording mode for the HDD.

11.7.5.3 CLOCK



a. Date & Time: the date and time is displayed here cannot be modified.
b. Internet Time Server: on / off.
c. Select Time Server: enter the time server's IP address.
d. Select Time Zone: select the DVR's local time zone.
e. Day Light Savings Time: on / off.
f. Start Time: select the month, week, day and time.
g. End Time: select the month, week, day and time.

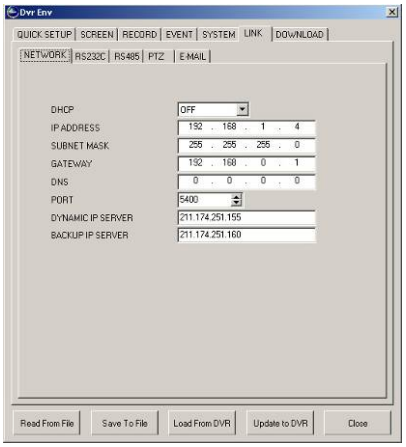
11.7.5.3 PASSWORD



a. Password Check: on / off
b. Passwords: define the DVR access passwords for all users.
c. Authority: define DVR access authority for users 1 through 4.

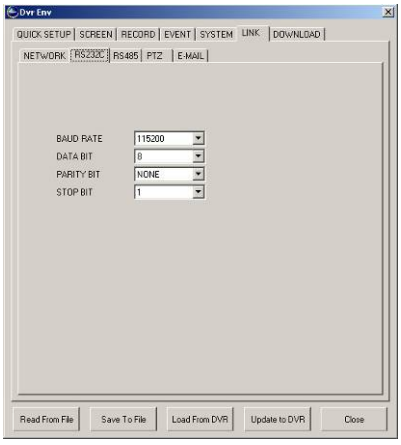
11.7.6 LINK

11.7.6.1 Network



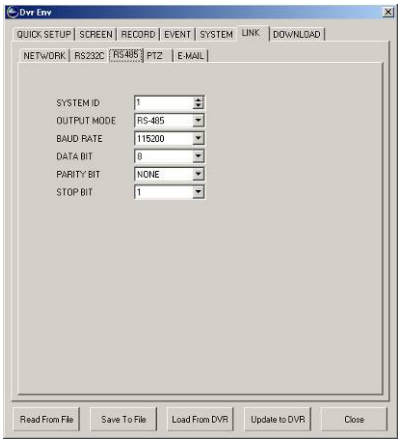
a. DHCP: on / off.
b. IP Address: enter the IP address.
c. Subnet Mask: enter the subnet mask.
d. Gateway: enter the gateway.
e. DNS: enter the DNS address.
f. Port: define port number.
g. Dynamic IP Server: enter the Dynamic IP Server address.
h. Backup IP Server: enter backup IP Server address.

11.7.6.2 RS-232C



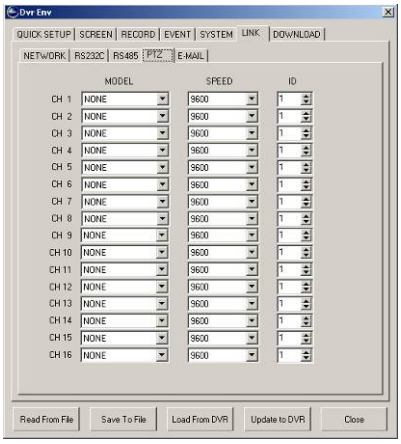
a. Baud Rate: select the communication speed.
b. Data Bit: select the data bit.
c. Parity Bit: select the parity bit.
d. Stop Bit: select the stop bit.

11.7.6.3 RS-485



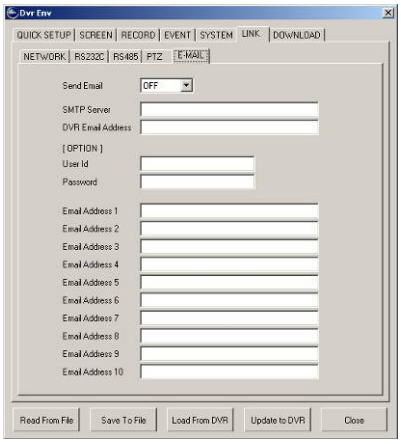
a. System ID: select the system ID.
b. Output Mode: select the output mode.
c. Baud Rate: select the communication speed.
d. Data Bit: select the data bit.
e. Parity Bit: select the parity bit.
f. Stop Bit: select the stop bit.

11.7.6.4 PTZ



a. Model: select the PTZ camera model.
b. Speed: select the communication speed.
c. ID: select the PTZ camera address.

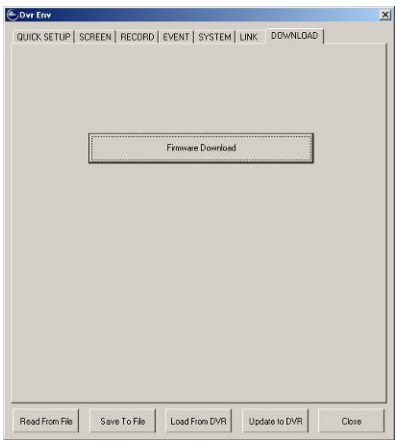
11.7.6.5 E-mail



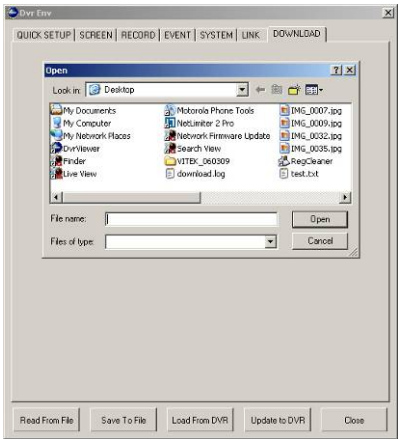
a. Send e-mail: on / off.
b. SMTP Server: enter the SMTP server address.
c. DVR e-mail Address: enter the DVR's e-mail address.
d. User ID: enter the DVR's user name for the e-mail account.
e. Password: enter the DVR's password for the e-mail account.
f. E-mail addresses 1 through 10: enter the e-mail addresses for e-mail notification.

11.7.7 DOWNLOAD

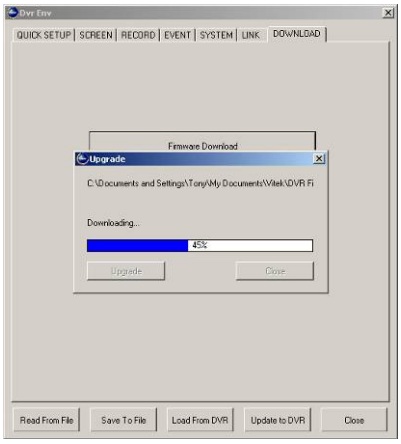
The DVR's firmware can be updated from the client software. Please remember that once the upgrade process begins, the connection ***must not*** be severed or interrupted.



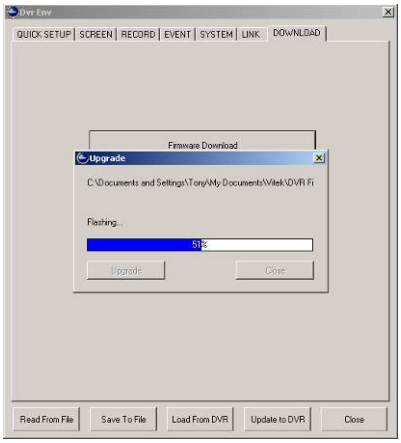
Click on FIRMWARE DOWNLOAD, and the DVR firmware open window will open.



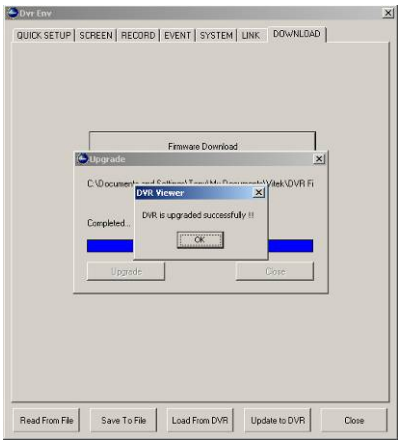
Locate the upgrade file and then click on OPEN to begin the upgrade process.



The file will begin loading onto the DVR.



Once the download is complete, the DVR will begin flashing the new firmware.



Once the upgrade is finished and successful, the DVR viewer will display “DVR Upgraded Successfully!!”

Restart the DVR, and the new firmware will be in effect.

APPENDIX

TIME ZONE LISTING

GMT-12:00	International Date Line West
GMT-11:00	Midway Island, Samoa
GMT-10:00	Hawaii
GMT-09:00	Alaska
GMT-08:00	Pacific Time (US & Canada); Tijuana
GMT-07:00	Arizona
GMT-07:00	Chihuahua, La Paz, Mazatlan
GMT-07:00	Mountain Time (US & Canada)
GMT-06:00	Central America
GMT-06:00	Central Time (US & Canada)
GMT-06:00	Guadalajara, Mexico City, Monterrey
GMT-06:00	Saskatchewan
GMT-05:00	Bogota, Lima, Quilto
GMT-05:00	Eastern Time (US & Canada)
GMT-05:00	Indiana (East)
GMT-04:00	Atlantic Time (Canada)
GMT-04:00	Caracas, La Paz
GMT-04:00	Santiago
GMT-03:30	Newfoundland
GMT-03:00	Brasilia
GMT-03:00	Buenos Aries, Georgetown
GMT-03:00	Greenland
GMT-02:00	Mid-Atlantic
GMT-01:00	Azores
GMT-01:00	Cape Verde Island.
GMT	Casablanca, Monrovia
GMT	Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
GMT+01:00	Amsterdam, Berlin, Bern, Rome, Stoholm, Vienna
GMT+01:00	Belgrade, Bratislava, Budapest, Ljubljana, Prague
GMT+01:00	Brussels, Copenhagen, Madrid, Paris
GMT+01:00	Sarajevo, Skopje, Warsaw, Zagreb
GMT+01:00	West Central Africa
GMT+02:00	Atehns, Beirut, Istanbul, Minsk
GMT+02:00	Bucharest
GMT+02:00	Cairo
GMT+02:00	Harare, Pretoria
GMT+02:00	Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius
GMT+02:00	Jerusalem
GMT+03:00	Baghdad
GMT+03:00	Kuwait, Riyadh
GMT+03:00	Moscow, St. Petersburg, Volgograd

GMT+03:00	Nairobi
GMT+03:30	Tehran
GMT+04:00	Abu Dhabi, Muscat
GMT+04:00	Baku, Tbilisi, Yeveran
GMT+04:30	Kabul
GMT+05:00	Ekaterinburg
GMT+05:00	Islamabad, Karachi, Tashkent
GMT+05:30	Chennai, Kolkata, Mumbai, New Delhi
GMT+05:45	Kathmandu
GMT+06:00	Almaty, Novosibirsk
GMT+06:00	Astana, Dhaka
GMT+06:00	Sri Jayawardenepura
GMT+06:30	Rangoon
GMT+07:00	Bangkok, Hanoi, Jakarta
GMT+07:00	Krasnoyarsk
GMT+08:00	Beijing, Chongqing, Hong Kong, Urumqi
GMT+08:00	Irkutsk, Ulaan Bataar
GMT+08:00	Kuala Lumpur, Singapore
GMT+08:00	Perth
GMT+08:00	Taipei
GMT+09:00	Osaka, Sapporo, Tokyo
GMT+09:00	Seoul
GMT+09:00	Yakutsk
GMT+09:30	Adelaide
GMT+09:30	Darwin
GMT+10:00	Brisbane
GMT+10:00	Canberra, Melbourne, Sydney
GMT+10:00	Guam, Port Moresby
GMT+10:00	Hobart
GMT+10:00	Vladivostok
GMT+11:00	Magadan, Solomon Island, New Caledonia
GMT+12:00	Auckland, Wellington
GMT+12:00	Fiji, Kamchatka, Marshal Island
GMT+13:00	Nuku'alofa